SOUTH MARKETING ISSUE
Pages 11-20

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Agronomists Make Plea for Change to Elemental Basis

Statement Cites Opportunity for Educational Program

EDITOR'S NOTE: This statement, prepared by agronomists from the 13 Corn Belt states at the recent Middle West Soil Improvement Committee's joint agronomist-industry meeting in Chicago, was presented by Dr. L. B. Russell, head of the department of agronomy, University of Illinois, Urbana.

For 10 years or more, the desirability of expressing fertilizer grades on an elemental basis has been discussed by agronomists, both in the colleges and in industry and by fertilizer control officials. The change has been strongly endorsed by the Middle West agronomists, the American Society of Agronomy, the Soil Science Society of America, the Association of Fertilizer Control Officials, and the Association of Experiment Station Directors.

Despite this wide endorsement and notwithstanding the fact that many fertilizer industry personnel participated in the committees and study groups that have considered the proposal in the past 10 years, there still exists a number of individuals who

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No Federal Funds Available for Fire Ant Control Program

— See Story on Page 2 —

WASHINGTON — Restricting the spread of fire ants from the Gulf Coast states to other parts of the nation can be achieved successfully by individual farmers, according to U.S. Department of Agriculture officials. Pesticides such as chlordane, heptachlor and dieldrin are effective against this pest.

The fire ant, imported into the U.S. from South America some years ago, heretofore had not been a widespread problem although the presence of the fire ant in the U.S. has been known for ten years. Now, however, the insect is spreading from the coastal Gulf states of Mississippi, Alabama and Louisiana to other states, carried by livestock and other means.

USDA entomologists last week told a House Agriculture Committee that the fire ant can be controlled by individual farmers through application of effective pesticidal materials. It is not likely that federal funds will be allocated to launch an overall control program against the fire ant, it was indicated. At the present time, at least, no federal money is available for this purpose, USDA spokesmen said.

The responsibility for control, therefore, rests with individual farmers in the areas threatened by this pest, it was emphasized by USDA. Local controls are most effective, and quarantines and other secondary methods are not applicable in the case of these ants.

Fire ants broke into public attention last week when a congressman from the ten-year-old infested area testified that the ants attack human beings as well as agricultural crops.

Despite requests for a federal program to stamp out the fire ant threat, USDA officials told Croplife here that the problem is basically one of the grass roots . . . that farmers themselves can control the pest by attacking it on their own lands with the effective insecticides presently available.

Soybean Nematode Probably Can Be Found in Many Midwest States, Missouri Meeting Told

COLUMBIA, MO. — "The soybean cyst nematode recently discovered in southeastern Missouri may be a native of the Mississippi River Valley that has avoided discovery for many, many years," Gerald Thorne, University of Wisconsin plant pathologist, said here at the recent annual Missouri Aerial Applicators Short Course.

Mr. Thorne, speaking to approximately 100 persons attending the two-day event held on the University of Missouri campus, added that he thinks it's likely that the nematode will be found in many midwestern states upon further inspection.

He pointed out that it may be necessary to "learn to live with them," since the nematodes are difficult to control, particularly in heavy soils when the pests are located at a considerable depth.

Mr. Thorne suggested that "a good four-or-five-year crop rotation" may be an effective means of

(Continued on page 25)

Measure to Restrict "Good Faith" Price Reductions Meets MCA Opposition

WASHINGTON—Hearings on the proposed Kefauver-Patman Bill—which would restrict sellers from lowering a price to an individual customer, without lowering the price to all, in order to meet in good faith competitive prices—were recessed here March 20, after some 30 persons presented testimony.

The hearings on the measure (S 11) will be resumed March 26 by the Antitrust Subcommittee of the Senate Judiciary Committee with the appearance of Department of Justice officials.

The bill would prevent a seller from lowering a price to an individual customer if such an act would lessen competition or tend to create a monopoly—even though such a reduction in price were made, in good faith, to meet a competitor's price.

Some 250 persons are scheduled to appear before the hearings, most of them industry representatives who are opposed to the measure.

Henry H. Fowler, counsel for the Manufacturing Chemists' Assn., told the subcommittee that the association opposes enactment of the bill and urges that Congress leave the application of Section 2(b) of the Robinson-Patman Act to the courts and the Federal Trade Commission.

"The association does not object to the basic principle of the Robinson-Patman Act, which it understands is designed to prevent price discrimination between customers unless justified by cost differences or required to meet the price of a competitor," Mr. Fowler said.

"It accepts that limitation on the right to compete as established public policy since the enactment of Section 3 of the Clayton Act in 1914 and its further confirmation in the Robinson-Patman Act in 1936.

"But the association is concerned lest further legislative alteration on this public policy result in further

(Continued on page 8)

Michigan Firm Starts Operation of New Liquid Fertilizer Plant

AKRON, MICH. — Rn's Fertilizer Co. has started operation of its new liquid fertilizer plant here. The new facility has a production capacity of about 20 tons an hour, and during peak seasons it is expected to operate from 10 to 12 hours a day. Harry Rohlfs and Stanley Smith are owners of the plant and Bill Anderson, plant manager.

The new plant, constructed by J. C. Carlile Corp., Denver, Col., is said to be the first aqua ammonia converter in Michigan. It incorporates the Carlile converter, described as being a combination ammonium phosphate cooler and aqua ammonia converter.

Beans and sugar beets are the principal crops grown in the Akron area.

Minnesota Increases Registration Fees

ST. PAUL, MINN.—The state of Minnesota has recently amended its Economic Poisons and Devices law to increase registration fees for pesticides. The new law calls for a fee of $7.50 each for the first five products of a firm, and a fee of $2 for the registration of each additional item.

Under the old law which had been in effect for many years, the state charged $5 each for the first five registrations of a company's products, with a maximum of $25. Income from this was inadequate to maintain needed inspection and control, according to state officials. The higher registration fees are expected to remedy this situation.

Conservation Reserve

WASHINGTON — More than 3.5 million acres of land had been put in the conservation reserve of the soil bank through Feb. 15, according to preliminary reports from state Agricultural Stabilization and Conservation (ASC) committees, the U.S. Department of Agriculture announced March 18.

Allied Begins Output of Prilled Ammonium Nitrate

NEW YORK — Nitrogen Division, Allied Chemical & Dye Corp., has begun production of prilled ammonium nitrate fertilizer in new facilities at its Hopewell, Va., plant.

The company has been making liquid ammonium nitrate and other nitrogen solutions for a number of years. In the new facilities, liquid ammonium nitrate is dehydrated, prilled, bagged and shipped. Shipment is by rail and truck in 80 and 100-pound bags. The new unit will employ between 70 and 100 men, depending on the season.

This form of ammonium nitrate contains 33.5% nitrogen. Nitrogen Division also manufactures a 20.5% nitrogen fertilizer containing ammonium nitrate and limestone. This material, also made at Hopewell, is one of a number of liquid and dry nitrogen products made by Nitrogen Division.

The new ammonium nitrate facilities were designed by Nitrogen Division's development department at Hopewell. Contractor was the Tidewater Construction Co., Norfolk, Va.

Official Concerned Over Spread of Imported Fire Ant

MONTGOMERY, ALA.—At least $25 million worth of damage is being done by the imported fire ant in 47 Alabama counties, A. W. Todd, Alabama commissioner of agriculture, reports.

Writing in the current issue of Alabama Farmers' Bulletin, a publication of his department, Mr. Todd says that a survey of Alabama reveals that 11,974,164 acres are infested with the pest.

"I believe that if this ant is not controlled, that ten years from now the damage can run into a $100,000,000 loss to our farmers each year," he said.

At the present rate of movement the entire state will be infested in 1960, Mr. Todd said.

The commissioner reported that he has asked the U.S. Department of Agriculture for a cooperative program to destroy the pests, and that he is working with legislature members on a measure to provide matching state funds for federal funds.

"These ants are so concentrated in some areas, I understand from letters I have received from farmers recently, that ants have killed new born calves on their farms," Mr. Todd said.

FIRE BLIGHT

PROVO, UTAH—Fire blight has invaded the apple orchards of Utah County, Joel C. Barlow, associate Utah County agent, reports. Pear trees in the county have been affected by the blight for many years, he said.

Change in Mosquito Control Fund Beaten

SACRAMENTO—The ways and means committee of the lower house of the California Legislature has turned down a proposal by the State Department of Finance to revise the formula for state subsidies to local districts for mosquito control.

The committee instead referred the question to a subcommittee for study and consideration at next year's legislative session. Thomas J. MacBride of Sacramento, and Lloyd W. Lowrey of Yolo County, assemblymen, led the fight against the cut.

The formula would have discontinued subsidies to districts where the tax rate for control work is less than 15¢ per $100 assessed valuation. The total state subsidy for mosquito control is $400,000.

MCA Issues New Edition of Chemical Industry Facts Book

WASHINGTON—The third editi of "The Chemical Industry Fac Book" has been published by t Manufacturing Chemists' Assn.

The 160-page basic reference wo on the chemical industry contains chapters ranging from "The Indu try's Role in the Economy" to su specifics as "Chemicals and Nucle Energy."

Profusely illustrated with char graphs and tables, the third editi of the Facts Book updates inform tion on virtually every facet of t industry. About 100,000 copies w be distributed either by chemic companies or directly by the MC It is anticipated that one of the pri cipal uses of the Facts Book will in schools and colleges as a supp mentary text and reference work. 20-page Teacher's Guide prepared Dr. John S. Richardson, preside National Science Teachers Associ tion, is available free to educato for use with the Facts Book.

The single copy price of the Che ical Industry Facts Book is $1 postage prepaid. Discounts are ava able on bulk quantities.

Cotton Committee To Study Resistance

COLUMBIA, S.C.—Resistance cotton insects to chlorinated hydr carbon insectcides has been estbalis ed in only one area of South Car lina, but close studies will be ma throughout the coming growing se son to determine further develo ments, cotton growers were told a meeting here.

In the meantime, growers are b ing advised to continue use of insec cides as recommended, a panel of e perts appearing before the State C ton Committee concluded.

Discussing resistance of cotton sects to insecticides were W. C. N tles, Dr. J. H. Cochran and Dr. J. Reed of the Clemson entomology partment; S. A. Williams, Clems cotton ginning specialist; R. L. Wa er, U.S. Department of Agricultu entomologist; and H. A. Wood Clemson agronomy extension speci ist.

The committee, whose memb represent cotton interests in state, passed a resolution asking t acreage allotments in the state increased to care for needs of sm growers without taking acreage aw from larger producers, and that lotted acreage not used be re-allot to other present growers to bala and stabilize operations on cot farms in the state. This move wo benefit fertilizer dealers, ginners, mill operators, credit agencies growers who have lost acreage, resolution asserted.

Eli Lilly & Co. Expands Agricultural Research Program

INDIANAPOLIS—Eli Lilly & has expanded its agricultural search program with the creation an agricultural research division. viously, agricultural research w part of the biochemical research sion.

In announcing the change Dr. P. Carney, vice president of Lilly search, development and contr named Dr. J. F. Downing, for head of the agricultural research partment, as the new division di tor. He is responsible to Dr. J. Leighty, executive director, scien research.

Dr. C. C. Leben has been na head of the agricultural research partment, and V. A. Thomas has named head of the administration partment at the Lilly Green (Ind.) Laboratories. O. K. Behr director of the Lilly biochemical sion, will serve as consultant to new division.

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INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
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TULSA, OKLA.—*1708 Utica Square*
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Homer Dudley

Nitrogen Division Names New Supervisor For Omaha District

OMAHA, NEB. — Nitrogen Division, Allied Chemical & Dye Corp., has named Homer Dudley as sales supervisor for direct application materials in the Omaha district. This district comprises Nebraska, Iowa, Kansas, Colorado, Wyoming and Montana.

Mr. Dudley has been with Nitrogen Division since 1955 as a sales representative in the Omaha area.

A native of Des Moines, he was graduated from Iowa State in 1947. He then spent five years as an instructor in a veterans agricultural education program, and was later co-owner of an Iowa fertilizer firm. The new sales supervisor now resides in Red Oak, Iowa. He is married and has three children.

v v

Nitrogen Division Opens New Sales Office

NEW YORK — Nitrogen Division Allied Chemical & Dye Corp. will open a branch sales office in Memphis Apr. 1, it has been announced.

The new office, located at Southgate Office Plaza, 1929-B South 3rd St., serves the states of Tennessee, Louisiana, Mississippi, Arkansas, Oklahoma, Texas and New Mexico. In charge of the Memphis office is Jack F. Dulaney, sales supervisor.

Elliott W. Atkinson Named Assistant to Monsanto President

ST. LOUIS—Elliott W. Atkinson, El Dorado, Ark., vice president-treasurer of the Lion Oil Co. Division of Monsanto Chemical Co., has been appointed assistant to the president to handle special projects, Charles Allen Thomas, Monsanto president, has announced.

Mr. Atkinson, who will assume his new duties June 1, will transfer his residence to St. Louis, Mr. Thomas said.

A native of Maysfield, Texas, Mr. Atkinson joined the Lion Oil Co. in 1924 and served in various capacities until 1931, when he became assistant auditor. In 1934 he become general auditor, and was elected a director in 1939 and comptroller in 1940. In 1943 he was elected treasurer-comptroller, and in 1955 he was elected vice president-treasurer.

ENGINEER TRANSFERRED

LUBBOCK, TEXAS—Elmer Hudspeth, agricultural engineer at the Lubbock Experiment Station, has been transferred to the station at Amarillo. While at Lubbock, Mr. Hudspeth helped design a press wheel planter attachment which resulted in better crop stands, and which became widely popular in West Texas.

Industry Partly To Blame for Too Few Ag School Graduates

KANSAS CITY—The problem of too few agricultural school graduates for the number of job openings was brought home to Kansas City agricultural business leaders here recently by deans from two land grant colleges.

Dr. John H. Longwell, dean, University of Missouri college of agriculture, and Dr. A. D. Weber, dean of agriculture, Kansas State College, said that the failure of industries allied with agriculture to present their stories to young persons is partly responsible for the decline of agricultural school enrollments.

Dr. Longwell said a survey by the Kellogg Foundation, East Lansing, Mich., found about 15,000 positions open annually to graduates of agriculture schools. In June, 1956, fewer than 7,000 students received agriculture degrees, he added.

One difficulty, the educators agreed, is that too many persons believe once the student has a degree he will return to the farm, when actually about 40% of the population is engaged in some other phase of food handling.

Dr. Longwell said there are more than 500 distinct occupations open to agricultural college graduates. The problem is to inform and to sell talented young persons on the idea of agriculture as a career.

Formerly, Dr. Longwell said, companies conducting interviews with graduating agricultural students went to the University of Missouri in February and March. The shortage is so acute, he said, that these companies began scheduling interviews last October.

At Missouri 60% of the students enrolled in agriculture are from farms, Dr. Longwell said. Twenty-three per cent are from small towns, 12% from St. Louis and the remainder from Kansas City, St. Joseph, Joplin and Springfield.

Dr. Weber said that 100 years ago agriculture represented about 50% of the gross national product, and that today agriculture represents about 40%, though much more of it is represented by industries allied to agriculture.

The meeting was sponsored by the Kansas City Chamber of Commerce agricultural promotion committee.

Chase Appoints New Sales Manager

TOLEDO, OHIO—Roy H. Ploeger, packaging salesman for Chase Bag Co. 23 years, has been appointed as manager of the firm's Toledo sales division. The announcement was made by W. N. Brock, vice president and general sales manager.

Mr. Ploeger succeeds R. H. Ayers, who has been promoted to sales manager of Chase Bag's paper bag division.

In his new position Mr. Ploeger will have charge of Chase sales in parts of Ohio, Michigan and Indiana.

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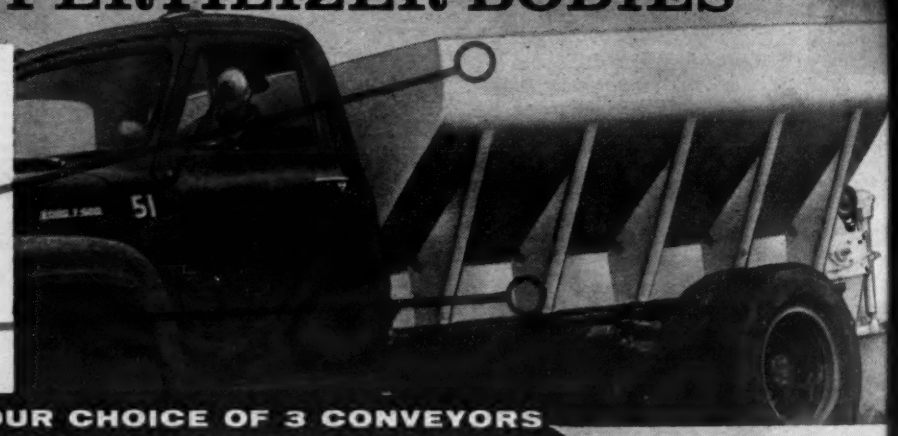

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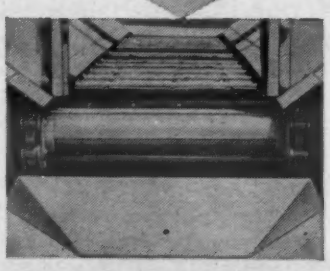

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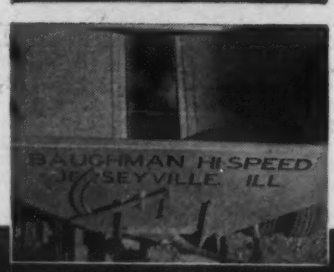

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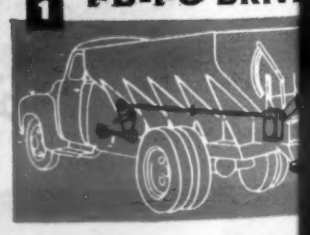

2 PD-GC DRIVE

3 HD-GC DRIVE

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FERTILIZER GRADE CHANGE

(Continued from page 1)

are not convinced that the change is in the best interests of farmers or of the industry. In the hope of achieving better understanding between the two groups, I have been asked to present the considered views of my fellow Midwest agronomists on certain key questions which seem to need clarification.

The conversion from the oxide to the elemental basis of reporting fertilizer grades will call for an intensified educational program to acquaint farmers and fertilizer dealers with the modern simplified system and with the revised ratios and grades. We feel that this offers an unparalleled opportunity for college and industry people to join hands in a concerted educational program that will bring fertilizers and soil fertility to the attention of all farmers more forcefully than has ever been done before. This will increase fertilizer use, not only immediately but for the years ahead.

The change will greatly reduce the confusion concerning fertilizers, grades, and ratios. The change is towards simplification. Therefore, the elemental basis is easier to understand. This is especially true for phosphorus. We guarantee phosphoric acid (P_2O_5) on a bag of fertilizer that contains neither phosphoric acid nor P_2O_5 (which is phosphoric acid oxide, not phosphoric acid). Similarly, we guarantee K_2O, but this oxide does not exist in fertilizers. Actually, either the chloride or sulfate salt of potassium is the form found in most fertilizers.

The present usage is also further confused by the fact that soil test values and the mineral composition figures for crop plants are generally expressed on the elemental basis. The effect of the change will be to leave this confusion behind. Any farmer who now understands the meaning of fertilizer grades and ratios already understands the relationship of the elements. The farmer who does not understand the present grades and ratios can learn the elemental relationship much more easily than the present confusing oxide relationship.

The change results in no major problems in formulating fertilizers. The conversion of existing whole number grades to an elemental basis results in fractional grades. The adjustment of those to the nearest whole number will cause no more shifting in formulations than is commonly practiced from season to season by most fertilizer manufacturers. A study of the grades currently recommended for the Midwest shows that the change-over and rounding to whole numbers will result in an actual increase in the amount of phosphorus and potassium in the majority of those grades.

The fertilizer industry, which has shown its progressiveness in many ways in recent years, can continue its advance by joining the majority members of the vast chemical industry who are using the simplified modern elemental basis of reporting chemical composition. Such a progressive move will enhance the prestige of the fertilizer industry and will attract much favorable public and professional attention. It will give added farmer confidence to the industry and the role that it plays in our agricultural economy.

Unfortunately much of the opposition to the proposed change has arisen from questions quite apart from the change itself. As an example, the question of water-solubility of phosphorus has no attachment, either real or implied, to the abandonment of the confusing oxide method of expressing phosphorus and potassium.

It is generally accepted that the change is inevitable; it is just a question of when and how. Under the provisions of the Model Fertilizer Bill, the earliest possible date for the initiation of the change is about July 1, 1960. This would be followed by a further period of two or more years during which dual labeling would be practiced.

It is hoped that responsible and sincere college, industry, and control officials can immediately join hands to make the transition in an orderly and logical manner. If approached in this spirit and with a mutual appreciation of each other's problems, we are confident that this advance in fertilizer terminology will result in a better understanding by all of us, and by the farmers whom we serve, of the nature of fertilizers and the important role they play in modern farming. This will increase the use of fertilizers.

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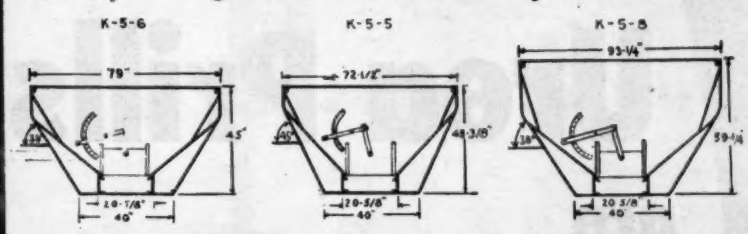
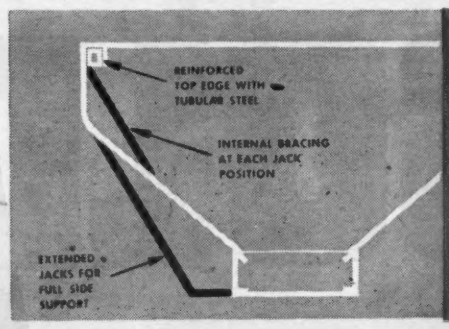


Chain Belt Conveyor Models also available in three sizes with 12⅝" Endgate and 8" narrower body.



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Highest Known Corn Yield in Louisiana Tops Production Contest

BATON ROUGE — Tommy Richard, Lafourche Parish 4-H Club member, reported the highest yield in the 1956 4-H Louisiana Corn Production Contest, a record-breaking 203.9 bu. to the acre. Results of the contest recently were announced by the sponsors, the Chilean Nitrate Educational Bureau and the Louisiana State University Agricultural Extension Service. W. E. Monroe, extension agronomist, and C. S. Shirley, state 4-H Club agent for extension, say that to the best of their knowledge, 203.9 bu. to the acre is the highest corn yield ever officially recorded in Louisiana.

Tommy Richard was winner in the alluvial soils division of the contest. Winner in the upland soils division was Nathan Williams, Washington Parish, with 161.3 bu. of corn from one acre. Winner in the bluff soils division was Donald Blahut, Livingston Parish, with 124.9 bu. to the acre. Tommy Richard's record book showed a net return of $184.18 on his acre of corn. Nathan Williams showed $107.33, and Donald Blahut $116.03.

Purpose of the contest, according to Monroe and Shirley, is to show what can be done by following recommended practices in growing corn. They say they do not expect that average yields ever will be nearly as high as those achieved by the contestants but that universal use of better methods could raise the state's present average of 26 bu. to the acre considerably.

SALESMEN TO MEET

A beefsteak dinner featuring motion picture highlights of the 1956 World Series will be held by the Salesmen's Association of the American Chemical Industry (SAACI) at Toots Shor's Restaurant, New York, April 4.

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Fertilizer Consumption In European Countries

The trend towards expanding consumption of fertilizers is expected to continue in the 18 countries forming the Organization for European Economic Cooperation, a body fostered by the U.S. as an off-shoot of the Marshall Plan for European rehabilitation after World War II.

The usage of nitrogenous fertilizers will rise by 5% in the fertilizer year of 1956-57, while potash and phosphate fertilizers will increase by 3%, OECC states. There are signs, however, that the rate of increase, apparent in the past few years, is levelling off, particularly for phosphates and potash.

All countries involved have given optimistic reports of their future consumption requirements, and in many cases they are backed by government efforts in the form of subsidies and other encouragements to farmers so that more fertilizers will be used.

One of the largest increases is reported by Spain. The total consumption of fertilizers is developing favorably—it has risen in each of the past two years by 16%. There is no sign of any diminution in demand.

In some countries consumption requirements exceed productive capacities by heavy margins and this indicates a growing demand for imported supplies.

Israeli Fertilizers

Israeli authorities continue to report a booming export business. During January, 10,000 tons of potash were exported to Japan and the U.K. Since that time, the Japanese have placed orders for a further 40,000 tons. The average price is around $32 ton f.o.b.

Increasing the efficiency of the export operation is a new automatic potash-loading installation at the port of Haifa. The Egyptians tried to bombard this installation during an abortive naval attack on Haifa during the recent war.

Potash production at the Sodom works is now at the rate of 200 tons a day, against 100 tons a day la September. Total production in 195 was 44,000 tons.

Cyprus Import Record

Imports of fertilizers into Cypru during 1956 were at an all-time hig Despite EOKA troubles, the island agriculture continues to improve wit the aid of fertilizers, while the e port trade makes a consequential co tribution to the country's income.

Italy and Austria shared the bus ness for nitrogenous fertilizers; Po tugal, Israel and Italy took the trad for phosphate fertilizers, with Po tugal also supplying mixed fertilizer

Remarkable is the sharp reducti in the sales of fertilizers by Briti manufacturers to Cyprus, evidently reflection of the feeling against Bri ain. In 1955 British sales were value at more than the equivalent of $300 000; in 1956 trade slumped to le than $40,000.

Dutch Ammonia

The Dutch States Mines, a goverr ment-sponsored company, has steppe up its output of ammonia, followin the completion of new equipment. Th daily production of nitrogen is no 520 metric tons, against 455 tons the end of 1955. A new developmen is the large scale production of ure

Aerial Dressing

The aerial top dressing of far pastures and crops in New Zealan has made great strides in recen years. In some areas the practice ha reached saturation point in the opi ion of the air services licensing a thority.

Applications to introduce furth facilities, submitted to the authori by agricultural contractors, are bei refused in the interests of maintai ing general stability in the industr

The first year of operation end ed in March, 1950, and at tha time there were seven operator with 15 aircraft. They distribute 5,000 tons of fertilizer. By March 1956, the number of operators ha increased to 56 with 303 aircraf and 400,000 tons of fertilizer wer dropped.

Mostly phosphatic fertilizers a used in New Zealand, the great part being in the form of superpho phate of 20-21%.

The New Zealanders think that t efficiency of modern aircraft for di tributing fertilizers has been develo ed to a high degree. Any improv ments in the future appear to lie improving the efficiency of the fer lizers themselves. In this respect, reduction in the moisture conte and the elimination of unwanted make-weight materials, is looked on as the next logical step.

Agricultural Meetings Held in Missouri Towns

COLUMBIA, MO.—A series of p ticide meetings in nine Missouri co munities is being held during Ma and April. The events are sponso by the University of Missouri's c lege of agriculture, and led by St ing Kyd, extension entomologist; R Fleetwood, field crops specialist; a William J. Murphy, field crops s cialist.

Following earlier meetings beg ning March 18 at Farmington, M the schedule calls for a confere at Mexico, Mo. at 8 p.m. March Subsequent meetings are set as lows:

April 1, Clinton, Mo., circuit co room; April 2, St. Joseph, YW building; April 3, Chillicothe, in high school auditorium; and Apri Kirksville, Mo., in the circuit co room.

All meetings start at 8 p.m. and over by 10 o'clock, the announcem states.

This year's recommendations herbicides and insecticides are b discussed at the meetings.

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A WORLD OF EXPERIENCE

Lee R. Hansen

Butcher Completes Insecticide Plant At Portland, Ore.

PORTLAND, ORE.—The L. H. Butcher Co. has announced the completion of construction and installation of an insecticide dust plant at Portland, Ore. for production of Butcher Brand products, according to Victor Schwartz, executive vice president, of Los Angeles.

Lee R. Hansen is manager of the agricultural chemical department for the Pacific Northwest, Oregon, Washington and Idaho. His assistants are W. B. Radey, Portland, and Hewitt H. Harrison, Seattle.

Mr. Hansen graduated from the University of Nebraska in agronomy. He completed his graduate work in agronomy at Oregon State College, then was on the staff of the farm crops department at Oregon State College. During the second World War, Mr. Hansen was an officer, in charge of agricultural and camouflage affairs of the Navy, Pacific Command. After the war he was assistant sales manager of the agricultural chemical division of Pacific Coast Borax Co. and Northwest sales manager of the plant food division of Olin Mathieson Chemical Corp.

The L. H. Butcher Co. has major offices and warehouses in Los Angeles, San Francisco, Fresno, Portland, Seattle and Salt Lake City and insecticide plants at Los Angeles, Fresno and Portland. In addition to being formulator of insecticides and agricultural chemicals, the company is manufacturer and agent in the distribution of industrial chemicals, agricultural chemicals, glass and metal finishing equipment and supplies, raw paint materials and ceramic equipment and materials in eastern United States.

Roy Hillebert is manager of agricultural chemical department for the Pacific Southwest, California, Arizona and Nevada. Pete Farris was recently appointed manager of the Fresno, Cal. agricultural chemical plant. Allen Hale is assistant manager.

Rye Grass Cutback

ALBANY, ORE.—Linn County, Oregon rye grass growers have decided to go ahead with their drive to cut back acreage by 25% for the next three years. Producers have been told they had nearly reached their goal of obtaining acreage agreement signatures from growers of 75% of the acreage. O. E. Mikesell, county extension agent, reports that more than 75% of the perennial acreage had been signed up, but agreements were still needed on 8,091 acres of common. A total of 435 growers had been contacted and 348 of these had agreed to reduce their acreage by 25 per cent. A total of 59 had refused to sign agreements, and another 28 were undecided.

Pesticide Residues on Agenda for ACS Meeting

MIAMI, FLA.—A week-long meeting of the American Chemical Society is scheduled for April 7-12 here, with papers on methods of analysis for pesticide residues, insecticide safety and other pesticidal topics occupying prominent spots on the convention program.

The ACS has announced that a number of trips and tours through laboratories, plants, and farms in the area have also been scheduled during the week of the meeting.

Dr. H. L. Haller, U.S. Department of Agriculture entomologist, Washington, D.C., will preside at a general session of the division of agricultural and food chemistry at the Shelborne Hotel, Miami Beach, April 8. Ten papers are scheduled to be presented during this afternoon session.

An all-day symposium on trace elements in human, plant, and animal nutrition will be held on April 9, with Dr. Firman E. Bear presiding at the morning session and Sam F. Thornton in the afternoon. The symposium will continue through the following morning, at which time D. M. Doty will preside.

The pesticides subdivision is scheduled to meet Wednesday afternoon, April 10, with D. A. Greenwood presiding. Papers scheduled for presentation at this session include one on "Insect Attractants," by S. A. Hall; "Recent Developments in Pesticide Formulations," by Edgar Selz and Paul Lindner; and "Contribution of Pesticides to Accidental Poisoning," by Dr. Bernard E. Conley.

A symposium on methods for analysis of pesticide residues will be held on Thursday, April 11, with Louis Lykken presiding at the morning session and C. H. Van Middelem as chairman of the afternoon meeting. The symposium is to continue on Friday with Mr. Lykken presiding in the morning and Mr. Van Middelem in the afternoon.

The event will mark the American Chemical Society's 131st National meeting, and chemists representing all branches of the profession are expected.

Dean M. Dunwody to Retire from Monsanto

ST. LOUIS—Dean M. Dunwody of Roanoke, Va., for many years a salesman with Monsanto Chemical Co.'s Inorganic Chemicals Division, will retire effective April 1, it was announced here.

A native of Georgia, Mr. Dunwody joined the engineering department of the former Swann Chemical Co. in 1922. He joined the Swann sales department in 1932 and was moved to the Roanoke territory in 1936, shortly after the Swann organization was merged with Monsanto. He has been at that location since that time.

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Soil Borne Mosaic Causing Anxiety to Kansas Farmers

MANHATTAN, KANSAS — Soil borne mosaic in southeastern Kansas wheat fields is causing farmers in that area considerable concern at the present time, according to Claude L. King, extension plant pathologist at Kansas State College. He says the virus disease is causing fields of wheat to turn bronze or brown in spots, or over entire fields.

Even though a field may look severely damaged, Mr. King says the plants will make a remarkable recovery just as soon as there are some warm, sunshiny days. With this kind of favorable weather, losses from the disease may be nothing at all to at most 25%. If the weather should remain cloudy and cool through the spring with damp soil, losses might run as high as 25 to 35%.

Mr. King and Hurley Fellows, USDA plant pathologist stationed at Kansas State College, were in Neosho, Wilson, Woodson and Lyon counties last week to examine affected fields and to collect plants for study at the college greenhouses. The disease also has been reported from Douglas, Greenwood, Montgomery, and Chautauqua counties.

The most recent year in which soil borne mosaic caused much trouble was in 1954. Many eastern and central Kansas wheat fields suffered losses estimated at about seven bushels to the acre. Mr. King said the mosaic did not show up in wheat in 1955 or 1956 because the soil was so dry, and because there was sunshiny, warm weather during the growing season.

HEADS PEE DEE STATION

CLEMSON S.C.—J. B. Pitner, Memphis, has been appointed superintendent and agronomist of the Pee Dee Experiment Station at Florence, S.C. He succeeds E. E. Hall, who retired Jan. 1, 1957, after serving as superintendent for 26 years.

Fertilizer Round Table Meeting Dates Arranged

WASHINGTON, D.C.—The annual Fertilizer Industry Round Table will be held at the Sheraton Park Hotel here Nov. 6-8, 1957, according to an announcement by Dr. Vincent Sauchelli, chairman.

An agenda is being developed for the meeting, built around the subjects of standardization of raw materials and fertilizers, ammoniation, fertilizer plant wastes, instrumentation, and plant maintenance. People in the trade are invited to offer suggestions as to subjects to be covered.

Sessions will begin at 1:30 p.m. Nov. 6 and will end on the afternoon of Nov. 8.

Original plans called for the meeting to be held at a different hotel in Washington, but firm commitments have now been made for the Sheraton Park, located at Connecticut Ave. and Woodley Rd., N.W., Washington.

KEFAUVER-PATMAN

(Continued from page 1)

restrictions on the right of free com petition so as to render it unwor able or diminish its effectiveness.

"Specifically, the association be lieves that the right to compet by meeting in good faith the law ful price of a competitor for a giv en customer's trade should not b limited; nor should it be jeopar dized by legislation such as S 1 that makes unclear or beclouds th situation in which a seller may s compete."

Mr. Fowler said that in the chem cal manufacturing industry the pra tice is prevalent of selling an indivi ual customer at a price less tha that at which the product is genera ly sold in order to meet in good fai a price by a competing seller.

"The prevalence of this practi should be recognized for its impo tance as a preservative of the com petitive tone of the manufacturi phase of the chemical industry," h said.

Adoption of a law that would r strict this process, "however ben ficial it may seem to be to certa groups of distributors or buyers wholesale and retail, may, in and itself, be substantially to lessen com petition or tend to create a mono oly," Mr. Fowler said.

He said that adoption of th measure would create uncertaint for manufacturer-sellers as t when they can meet a competitiv price. Under this proposed bill, h said, chemical manufacturers mus "merely guess whether they ca use the good faith meeting of lower price offered to a give customer as a competitive too without subsequently being foun to have violated the law."

Mr. Fowler said that the associ tion was aware that its approach the proposed measure is "primari that of those who manufacture a sell, rather than the point of vie of most of the proponents of S. who represent those who merely bu merchandise for resale."

But, he said, impact of the mea ure would be adverse to the man facturer and consumer and "w serve primarily to insulate certa lines of wholesaling and retaili from the effects of competition."

Gibberellins Not Yet Available for Use on Edible Crops

NEW YORK—Industry sources i formed Croplife last week that t Food and Drug Administration h not yet given its approval for th use of gibberellic acid materials edible crops.

A story about gibberellin tests Michigan State University, which a peared on page 5 of the March issue of Croplife, said that comme cial preparations now are availab for use on flower, vegetable and fr crops.

Industry sources told Croplife th this is a misleading statement. Th said that inasmuch as FDA has n given approval for use of the ma rials on edible crops, gibberell preparations are not yet availab for truck gardeners and orchardis

WATER OUTLOOK

FORT COLLINS, COL.—The wat supply outlook for Colorado is t brightest in four years. Homer Stoc well, chief snow surveyor for the S Conservation Service, stationed Colorado A&M College, said that of March 1 the snow pack is norm or above. Water supply on the We ern Slope, Mr. Stockwell said, sho be adequate in most areas. In t Lower South Platte and Arkan Valleys, however, water shorta may be expected but not as bad occurred in 1956, he added.

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WORD MAGIC IN EMPLOYEE RELATIONS

Words are the most important tools in a supervisor's employee relations kit. Are your words working for or against you?

By Jack E. Bedford
Professor of Management, Armstrong College

As you know, you could build better employee relations in your department if you used the "right" word at the "right" time when talking to your employees. And, you also know that it is easier to make this statement than it is to put it into practice in your day-to-day dealings with people under your supervision.

Here are some ideas you can use to put word magic into your dealings with employees in your store or plant . . words that will work wonders in building better employee relations for you.

You, You, You: Song writers Robert Mellin and Lotar Olias who penned the lines for the popular tune, "You, You, You," employed word magic in the title. It has natural and universal appeal. When a romantic young man hears a beautiful girl sing the song, he hears the "you, you, you," as though the girl was singing, "me, me, me."

Supervisors can borrow a page from this fundamental principle of human relations and woo their employees with the powerful words—You, You, You. They hear the word "you" and it comes out "me." This psychology automatically puts the employee into the picture and he is more responsive to the ideas and suggestions you make.

Here's a simple little experiment you can try to check and to improve your "you-ability." Describe some work assignment to a worker in about seven short sentences. Keep your description specific, but be brief in the way you describe the duty to the new worker.

Count the total number of words you have used to describe the assignment you selected for this experiment. Count the total number of times you used the words "you" or "your." Divide this by the total number of words you used in your description. This will give you your "you-ability" score. Ten is considered good.

Now add the word "you" to each of the seven sentences you had in your original description. This may require a change in the sentence, but be sure you keep the same thought as you add a "you" to your sentences.

You will see how this addition of the word "you" changes the tone of what you said. You will be making your work assignment in terms of your employee's viewpoint. Word magic will help you get the kind of cooperation you want in your department.

You may feel that you can use "you" too many times in handling work assignments. When you first

start to apply this word magic in your human relations problems, you will be very conscious of the number of times you use "you." You may get the idea that you are putting too much emphasis on the "you" idea.

However, you will find that your employees are not conscious of the strong use of "you" in your instructions. They will develop a cooperative attitude, but will not know exactly why they like you as a supervisor . . . your word magic will be working for you.

As You Know: These three little words can be real word magic for a supervisor in a fertilizer plant who will put them to work. Everytime you use the expression, "as you know," you will give your employee a subtle compliment. You indicate through your word magic that you recognize your employee has plenty of know-how about his job. Yet, you have an opportunity to repeat your instructions with extra emphasis.

Regardless of whether or not your employees know what you are telling them, they will agree. Vanity enters the picture to help this word magic work for you in building better employee relations in your department. Your employees go on record as knowing because you have used the "as you know" preface to your instructions.

When you use enough "as you knows" in dealing with your employees, you will find that they readily accept your idea or instructions. Before long the ideas you have planted with this "as you know" psychology become your employee's ideas. Word magic will have done an employee relations job for you.

There are two thoughts to keep in mind in applying this word magic in dealing with workers in your department: (1) use the phrase "as you know" to preface the point you want to make—not after you have made a complete explanation, (2) do not use this word magic on points that the employee could not possibly know—keep it for things he might or should know.

What Is Your Opinion? One problem you probably have in your plant is finding out exactly what your employee's interests and desires are. When you use the word magic, "What is your opinion?" you will be able to draw out your employee's real problem or interests. It will pin-point the problem your employee has, and then you can quickly work out a solution to this problem and give him what he really wants.

Asking an employee for his opinion is a subtle compliment. It gets away from the thought that the supervisor is trying to put something over on him. He believes that you are a friend of his because you have asked him for his opinion.

"What is your opinion?" is word magic. But, it can be a dangerous device to use in dealing with employees under your supervision. You should be sure that the point it is used on is not a subject that will get the conference off the track.

Another pitfall to avoid is the constant repetition of the same phrase—"What is your opinion?" It is good word magic, but it becomes better if the same idea is expressed in other words. For instance, you might ask, "What do you think of this?" or, "How do you suppose we should do this?" or, "What is your thought on

(Continued on page 14)

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New Insects and Diseases Discussed at Sixth Annual Clemson Pesticide School

CLEMSON, S.C.—New insects and diseases and how they may affect South Carolina growers occupied the attention of the 6th annual pesticide chemical school held at Clemson College, Feb. 27-28. Over 100 representatives of the agricultural and chemical fields were on hand for the 2-day meeting, which was held in the Clemson House Hotel.

The meeting, in addition to featuring new insect and disease problems, also covered such items as safe use of chemical pesticides, insecticide recommendations with emphasis on insect resistance to insecticides and chemicals for nematode, disease and weed control.

Dr. M. D. Farrar, Clemson's dean of agriculture, in welcoming the group to Clemson, said the purpose of the school was to better acquaint people with pest control. He said that every effort should be made by those in agriculture to make farmer operations as profitable as possible. He recommended the use of insecticides, nematocides or fungicides in situations where demonstrations have already shown savings to be possible.

New pest problems given particular attention during the meeting included oak wilt, Striga, spotted alfalfa aphid, Japanese beetle, sweet potato weevil and the pepper maggot. The spotted alfalfa aphid, pepper maggot and Striga were reported in South Carolina for the first time during the past year.

Dr. G. H. Hepting, chief, Forest Products Laboratory, Asheville, N.C., said that oak wilt has not yet been reported in South Carolina but that it has been found as far south as Tennessee and North Carolina. Dr. Hepting reported that oak wilt was a killing disease and attacks all kinds of oaks. The disease is rather widespread in many of the northern states. He stressed that although the potentialities of this disease are great, progress is being made toward its control in the Southeast.

Dr. W. B. Albert of the South Carolina Experiment Station reported that Striga, an insidious weed parasite that destroys corn and other crops of the grass family by attacking their roots, has appeared for the first time this past season in some locations in both North and South Carolina. The parasite until this past season was only known to exist in the countries of the Far East.

Dr. Albert said that scientists of the state agricultural experiment stations, working in cooperation with the U.S. Department of Agriculture Agricultural Research Service, are taking immediate steps to determine the extent of the infestation. Plans are being laid also for research aimed at making next year's control measures against the pest as effective as possible.

The spotted alfalfa aphid appeared for the first time in South Carolina during 1956, according to W. F. Chamberlain of the Clemson entomology department. This insect breeds almost entirely on alfalfa although it has been found on bur clover. Mr. Chamberlain says that the spotted alfalfa aphid can be controlled but the question is whether the procedures are economically feasible. It is hoped that research during the coming year may turn up some new answers about control measures for this insect.

A report on boll weevil resistance to insecticides created a great deal of interest at the school. Dr. Robert E. Fye of the Pee Dee Experiment Station, Florence, discussed reports from Louisiana on resistance of boll weevils to insecticides in that state. He said that tests were also made this past season in South Carolina and that there was evidence of some scattered resistance in the state. Equipment has been set up at the Florence station, and additional tests and wider surveys are planned for next season, according to Dr. Fye.

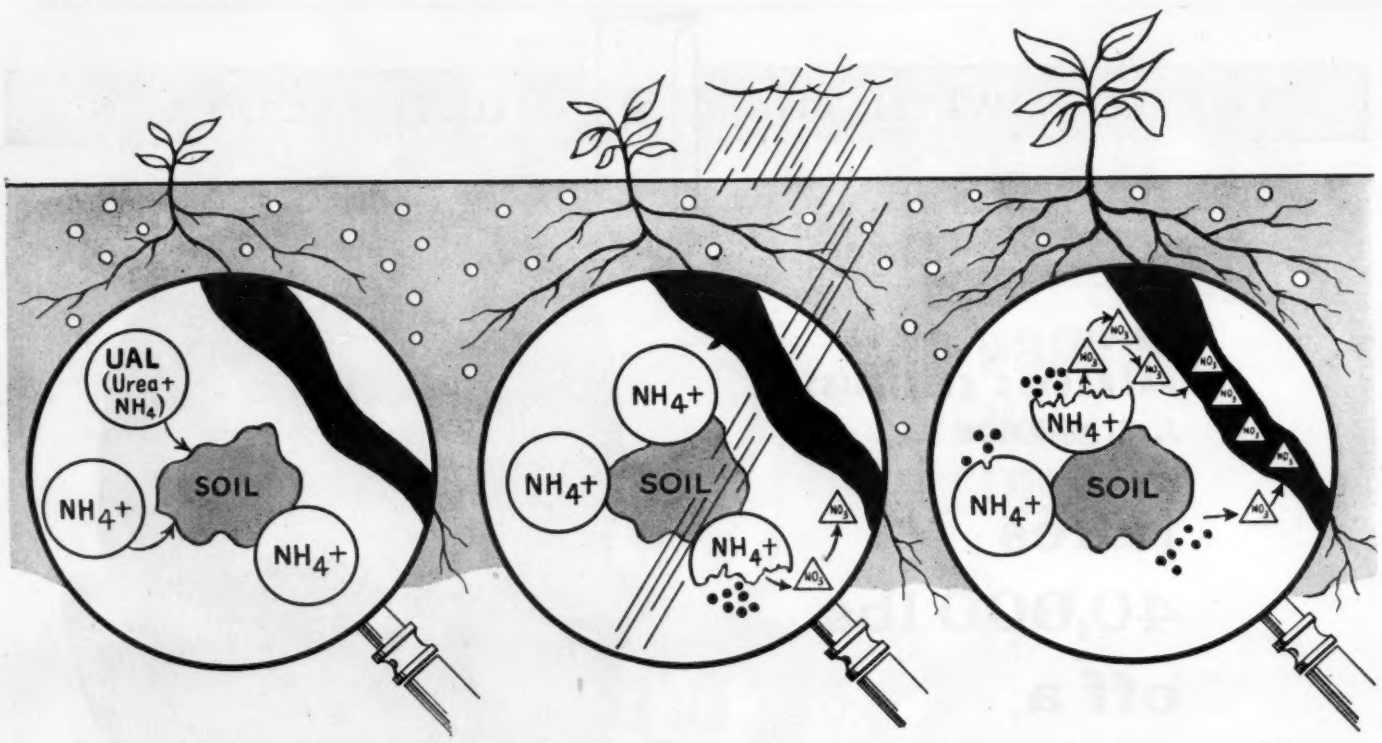
In the discussion on chemicals for weed and disease control, Dr. H. H. Foster of the S.C. Experiment Station told of some interesting work underway on control of root-knot nematodes on peach tree roots.

Dr. Foster considers root-knot nematodes to be of particular importance in the peach-growing areas of South Carolina. He listed pre-plant treatments as the number one control measure.

Recent experiments with post-plant treatments are showing promise, however. Dr. Foster says that in post-plant treatments nemagon was sprayed around the roots of living peach trees at rates of 5 to 10 gallons per acre. These rates reduced the soil root-knot populations, but he says additional experiments must be conducted before definite recommendations can be made.

Other speakers on the program included representatives from the State Board of Health and USDA and members of the Extension Service and Experiment Station staffs at Clemson.

Dr. J. H. Cochran, head, department of entomology and zoology, and W. M. Epps, head, department of botany and bacteriology, were in charge of the school.



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85 Eglinton Avenue East, Toronto 12, Ontario

Arkansas Sales Dip In Last Half of 1956

LITTLE ROCK — Arkansas fertilizer consumption during the last half of 1956 totaled 59,915 tons, compared with 60,299 tons in the last half of 1955, the Arkansas State Plant Board has reported. Included in the sales for the 1956 period were 13,212 tons of ammonium nitrate, 7,846 tons of 10-20-10, 6,574 tons of 5-10-5, 4,63 tons of anhydrous ammonia, 3,31 tons of triple superphosphate, 3,16 tons of urea and 3,009 tons of muriate of potash.

MOLE CRICKET DAMAGE

CLEMSON, S.C.—According to reports received here tobacco plant beds are being damaged by mole crickets at the present time. This insect is sometimes called the "ground puppy." Damage to the bed is caused by small mole-like burrows that the insect make as they tunnel through the top 1 to 2 inches of the soil. The plant bed may be ruined unless the insects are controlled.

Special Merchandising Section

Better Selling

Marketing News and Features

MPLE PARKING—An attractive store front faces the large parking area rovided for customers of the Dixie Supply Co., 8 Mile, Ala. John White, the wner, has developed a farm supply business to serve numerous home own-rs, gardeners and small farmers in the area. Some customers will buy up-ards of $500 worth of merchandise in a year.

Alabama Dealer Gears His Stock To Fit the Home Owner-Gardener

By AL P. NELSON

John White, owner of the Dixie upply Co., 8 Mile, Ala., is convinced hat there are many areas where rm supply stores can prosper, espe-ally in outlying areas of large cen-rs of population.

Mr. White cites his own experience o make this point. 8 Mile, Ala., is orthwest of Mobile, Ala., about 10 iles and when Mr. White opened a rm supply store there about four ears ago, there were only a few mall farms here and there. Today here are many home owners in the egion who have a ½-acre or more f land and who have sizeable gar-ens and lawns. For their outdoor ctivities, many of these home own-rs will buy upwards of $500 worth f products and services annually, nd mostly for cash.

In fact, Mr. White's business grew so rapidly, that last year he built a 20 by 100-ft. addition to his store, so as to be able to have more stock and display more mer-chandise. This increase in display space is paying off, too, in larger sales.

Mr. White also sells fertilizers, eeds and other supplies to farmers n the area. They like to come to is store which is handy to reach, nd which has fine parking right off he highway. In fact, no customer an complain about congested park-g areas here, for there is ample oom.

"People like to come to an out-kirts store like this and browse round," reports Mr. White, "and hen they buy more, too. They get he idea of having a garden, building hedge, raising a few chickens and abbits, for they have the land to andle such activities. People like hat may come into our store two to our times a month to buy supplies. nd because of the long growing sea-on in this state, such buying con-inues about 10 months a year. Dur-ng the short winter months we can till sell feeds, pet goods and sup-lies."

Mr. White says that seeds, both garden and field, are good profit items, and they bring many people to his store. Seed customers fre-quently buy fertilizer, peat moss, insecticides, sprayers and garden tools. He always gives plenty of space to displays of seeds, includ-ing seed potatoes and vegetable plants.

The last few years Mr. White has added hardware, fencing and flour to his stocks in trade, and these are ad-ditional reasons why volume is con-stantly mounting at this outskirts store.

While many dealers located in an outskirts spot would not advertise in a metropolitan newspaper, Mr. White does advertise in the Mobile newspa-per. He wants people in his area to know where his store is located and what he sells, he says, and many folks read the Mobile paper. His ads are not large, but they are in the pa-per sometimes once or twice a week and thus have a regularity which at-tracts attention.

Nitrogen Needed to Get Best Results With Irrigation

COLLEGE STATION, TEXAS—Studies conducted by Texas A&M College at Crystal City in 1955-56 with Coastal Bermudagrass showed that heavy applications of nitrogen fertilizer must be used to obtain maximum return on investments for irrigation.

Under irrigation, yields ranged from 5,770 lb. of air-dry forage per acre with no nitrogen to 26,060 pounds with 600 lb. of nitrogen (1,800 lb. of ammonium nitrate) per acre per year. Dryland production ranged from 1,070 lb. with no nitrogen to 4,340 lb. with 60 lb. of nitrogen per acre per year.

Applying 240 lb. of nitrogen per acre per year under irrigation gave the greatest return for each dollar of cost. However, the maximum net re-turn was obtained with 600 lb. of ni-trogen per acre.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The prediction was made at a recent Indiana farm supply dealers' meeting that the use of fertilizer in Indiana would be two million tons by 1967 compared with 1.2 million tons consumed in 1956.

Who, it was asked at the meeting, will sell this increased quantity of fertilizer? A high percentage will be sold by the present handlers of fertilizers, which include many feed and grain dealers and elevator operators, it was pointed out.

One speaker, J. R. Kiefer, Ellwood, Ind., a representative of the Nitrogen Division, Allied Chemical & Dye Corp., said that "consider-ing the average dealer's trade area to be a 5-mile radius, it means that some one will sell nearly 7,000 tons of fertilizer in each agricultural com-munity in Indiana.

But, he warned, the fertilizer deal-er, must change with the times just as the farmer of the future will be a "new bred of cat." The only thing that will prevent the present dealer from dominating the fertilizer sales scene in the future is the dealer him-self. Said Mr. Kiefer:

"The dealer of the future will be aggressive. He will be forward look-ing and forward thinking. He will be keenly interested in growing crops as the good feed dealer of today is inter-ested in growing livestock.

"A leading agronomist made the statement that in his opinion the sales of lime would increase mate-rially if the price were higher; high enough to allow for a good promo-tional and sales campaign.

"Therefore, the dealer of tomorrow will establish a profit margin in the sale of fertilizers high enough to justify a real sales effort and advert-ising and promotional campaign. He will take a real interest in community development. As an expert business-man he will survey the potential mar-ket and design a program to sell not 100% of the business but all he can get.

"The dealer of the future will equip himself with as thorough a knowledge of his product as the feed dealer now uses in the sale of feeds and here the fertilizer industry can be of great help to a dealer. For through higher level selling by screening the wealth of information available, fertilizer salesmen will be able to pass on to the dealer the essential information that can be used as practical selling tools.

"The dealer will attend meetings and conferences that will increase his knowledge of the product and by mastering the fundamentals of soil management he will open a new dimension of service, a more thor-ough understanding of the condi-tions in his local agricultural area. The dealer of the future will be a good enough businessman to or-ganize a promotional campaign.

1-Man Operation May Not Survive

"But the one man operation of the past may not be good enough for the future. The fertilizer dealer of the future will use a continuous employee training program. He will delegate as much responsibility as possible to spe-cialists who work for him. He will plan his local advertising a year in advance. The industry can help on the nationwide advertising level, but the local advertising will be part of the dealer's activity. He will organize farmer meetings, will work with FFA, the 4-H boys, with the vo-ag classes, with the county agent, with any group that can help him stimu-late community interest. He will work with bankers, service clubs, with the barbers, with implement dealers, with anyone who can contribute something to the better understanding of the farmers' need.

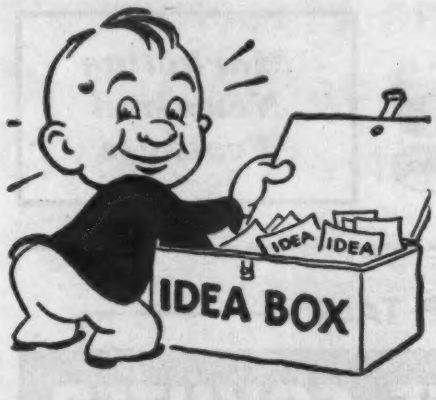
"The fertilizer department of Smithtown Grain Company will be the headquarters for fertilizer and for fertilizer information in Smith-town, Ind. He will conduct demon-strations and check plots to deter-mine the effectiveness of his rec-ommendations and to convince doubtful customers that he knows whereof he speaks. He will conduct field trips and use other means that will net favorable newspaper pub-licity. But above all he will be a salesman," Mr. Kiefer said.

HOW FERTILIZER INCREASES CROP YIELD

	Average present yields	May be possible with fertilizers and other recommended practices
Wheat (Eastern Oklahoma)	18 bu.	30 bu.
Wheat (Western Oklahoma)	12 bu.	19 bu.
Oats	22 bu.	55 bu.
Corn	18 bu.	40 bu.
Cotton	152 lb. lint	350 lb. lint*
Grain Sorghum	13 bu.	26 bu.
Forage Sorghum (or silage)	5 tons	11 tons
Peanuts	530 lb.	1,000 lb.
Castor Beans (Hulled Beans)	300 lb.	600 lb.
Improved Pasture	100 lb. beef/A	250 lb. beef/A

*Eastern Oklahoma and sandy soils in western Oklahoma.

BOOSTING CROP YIELDS—The table above shows average increases in crop yields that are possible with the proper use of fertilizers and other suit-able practices. The figures are obtained from results of experiments conducted by the Oklahoma Experiment Station and demonstrations conducted by the Oklahoma Extension Service. The table is reprinted from a recent Oklahoma A&M College publication, "Know Your Fertilizers."



What's New...

In Products, Services, Literature

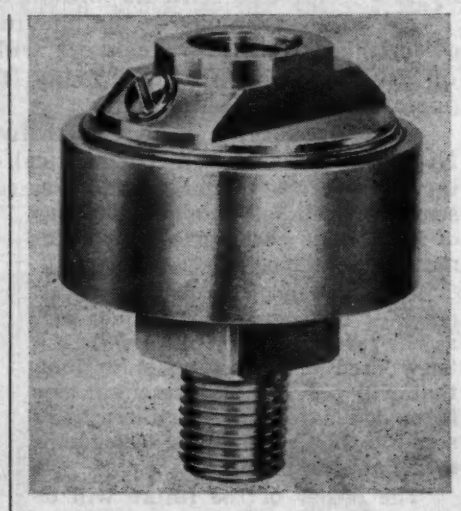
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6550—Agricultural Chemicals Booklet

The Harshaw Chemical Co. has prepared a 20-page booklet entitled "Harshaw Chemicals for Agriculture." The contents include sections devoted to essential trace elements in plant nutrition, trace mineral compounds, fungicides, weed killers and miscellaneous agricultural compounds. Facts about the company and its facilities are included. In the booklet also are a list of agricultural chemicals manufactured by the company, other literature available from the company and supplementary reading suggestions. The booklet will be sent without charge if you will check No. 6550 on the coupon and mail it to Croplife.

No. 6553—Aluminum Diaphragm Assembly

A new aluminum diaphragm assembly designed particularly for use with nitrogen solutions and any other pressure medium not injurious to aluminum, has been developed by the Jas. P. Marsh Corp. The unit is designed for field assembly and may be used with any reliable fluid-filled pressure gauge. It is suitable for applications using up to 200 lb. pressure. The entire housing is of aluminum, the diaphragm is of Buna-N, a flexible, rubber-like material that is said to retain its original resilience even under heavy usage. A plastic tube of filling fluid and detailed instructions for field assembly are furnished with every unit. Secure complete details by checking No. 6553 on the coupon and mailing it to Croplife.



No. 6549—Liquid Fungicide

The Chemical Insecticide Corp. has developed a new sticking agent, U-101, which it is adding to the liquid fungicide it markets under the Chem-Bam name. The agent is said to make the fungicide adhere more strongly to vines and plants. The company's announcement states: "U-101 virtually gives crops an impregnable coating of fungicide that can't be washed off by rain or watering. This, of course, gives crops greater protection against early and late blight, anthracnose, downy mildew, cercospora, blue mold, gray mold, bunch rot, and leaf spot than was possible heretofore." The fungicide has been used with great effectiveness on sweet corn, celery, beans, escarole, lettuce, potatoes, cabbage, cucumbers, peppers and beets. For free literature check No. 6549 on the coupon and mail it to Croplife.

No. 6552—Heptachlor Brochure

"Heptachlor Kills A Wide Variety of Insects," is the title of a brochure published by the Velsicol Chemical Corp., which has been revised to include the latest federal label acceptances for Heptachlor. Close to eighty different insects killed by Heptachlor are listed and a brief statement of recommended dosages is given for each. The new brochure is expected to be of special interest to insecticide formulators, agricultural specialists, agricultural supply dealers and farmers throughout the country because of its condensed listing helpful in insect control planning. Copies of the brochure are available free of charge. Check No. 6552 on the coupon and mail it to Croplife.

No. 5657—Seed Germinator

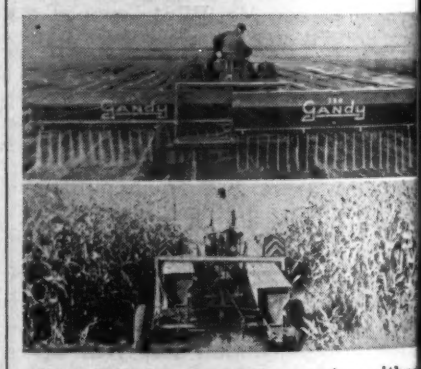
The addition of the new Minnesota style germinator has been announced by the Seedburo Equipment Co. The germinator is a water cooled unit designed for organizations which need to maintain uniform temperature and accuracy, the company announcement states. The water is circulated through copper tubing built within the walls of the germinator, thus preventing leakage. Further information and prices on the firm's line of germinators may be obtained by checking No. 5657 on the coupon and mailing it to this publication.

No. 5660—Display Fixtures

A four-page bulletin on store display fixtures, some of which are applicable to retail feed stores, has been issued by the Sitka Store Fixtures Co. The fixtures are designed to give maximum display and eye appeal to merchandise at strategic points where store traffic is at a maximum. The items also are designed for easy self-service. Interested dealers may obtain a free copy of the folder by checking No. 5660 on the coupon and mailing it to this publication.

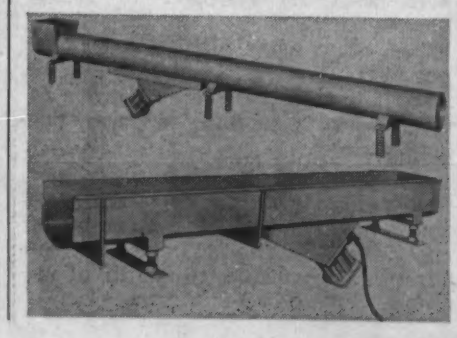
No. 6543—Fertilizer Spreader

A 20-ft. wide, spreader-seeder that folds to less than 8 ft. in width for highway travel has been announced by the E. S. Gandrud Co. The unit is also claimed to minimize the soil compaction problem in wet fields. The unit holds more than one ton of fertilizer at one time using either bulk or bag fertilizer. Two hoppers make it possible to use the spreader for application of mixed fertilizer or the application of two straight elements, one from each hopper. The unit is said to be ideal on cultivated land, pastures and hayland, as well as for side dressing six rows of corn at one time or banding fertilizer as in cotton. The seeding of brome grass, oats and other cereal grains or grasses is also possible. The unit is said to be suitable for custom work by dealers. Check No. 6543 on the coupon and mail it to Croplife to secure complete details.



No. 5661—Vibrating Feeder

The Cleveland Vibrator Co. has introduced a new vibrating feeder in which the vibrating force is generated by a pneumatic drive mechanism. The feeder is completely metallic, and is claimed to resist high temperature damage and corrosion. Literature shows one moving part in the drive mechanism; no cams, bearings, belts or gears. The enclosed construction is designed to seal out dirt and keep the drive free from destructive foreign matter. A wide variety of bulk material can be handled, the company states, and uphill feeding of some materials at 20° is possible. Rates of feed are adjustable. The feeders are available in pan, trough or tubular construction, with a selection of lengths and rates of feed. Check No. 5661 on the coupon and mail it to secure full information.



No. 5650—Seed Treater Attachment

Two different seed treating chemicals may now be applied simultaneously through use of the dual reservoir attachment recently announced by Panogen, Inc. The attachment for seed treaters was developed so that two physically incompatible materials could be applied at the same time without mixing before they reach the seed, state company officials. They continue: "This, for example, permits the seed processor to apply Drinox, the liqui

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

Send me information on the items marked:

- ☐ No. 5648—Side-Dump Body
- ☐ No. 5650—Seed Treating
- ☐ No. 5652—Tail Gate
- ☐ No. 5657—Germinator
- ☐ No. 5660—Display Fixtures
- ☐ No. 5661—Vibrating Feeder
- ☐ No. 6542—Applicator Kit
- ☐ No. 6543—Fertilizer Spreader
- ☐ No. 6544—Methallyl Chloride
- ☐ No. 6545—Applicator
- ☐ No. 6546—Folder
- ☐ No. 6547—Booklet
- ☐ No. 6548—Crusher
- ☐ No. 6549—Fungicide
- ☐ No. 6550—Chemicals Booklet
- ☐ No 6552—Heptachlor
- ☐ No. 6553—Diaphragm

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COMPANY .....

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CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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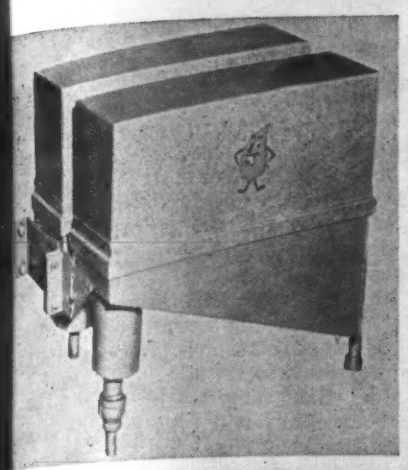

nsecticide, and Panogen liquid seed disinfectant with a single trip through the treating equipment. Another feature is that one reservoir may be used to hold a chemical such as Panoram, Arasan, Spergon and Captan for slurry treatment of corn or beans while the other holds a liquid fungicide such as Panogen for treatment of small grain. The operator can switch from one tank to the other almost instantly without losing time for cleaning and changeover." For further information check No. 5650 on the coupon and mail it to this publication.

No. 6545—Liquid Fertilizer Applicator

New literature has been prepared by the M. & F. Manufacturing Co. on its product called by the trade name, M&F Distributor, a unit for applying liquid fertilizers, solutions, weed killers and other liquids by the gravity method. The unit is furnished with a 1-in. inlet valve so that the entire job of assembly can be done by the user. Also available is an adjustable nozzle which can be drilled by the fertilizer dealer or user to give him an option of three different size orifices for adjusting the rate of application. The nozzles are made to insert in a ½-in. inside diameter hose and the size of the orifice is selected by rotating the nozzle cap. Secure the literature by checking No. 6545 on the coupon and mailing it to Croplife.

No. 6548—Laboratory Crushers

The American Pulverizer Company's new bulletin, "Better Testing and Small Scale Reduction," describes laboratory crushers used for crushing laboratory samples, ores, chemicals and other diverse materials. Capacities of the crushers described range from 600-2,000 lb. per hour, depending on the materials and degree of fineness required. Typical installations are illustrated. The bulletin may be secured by checking No. 6548 on the coupon and mailing it to Croplife.

NEW IN '57
ANOTHER MEMBER OF THE TEEJET
SPRAY NOZZLE FAMILY
TeeValve
● For unequalled selective spray control in boom spraying. Exclusive design permits choice of setting with valve in "Off" position. Saves chemicals . . . easier to use. Outlet for spray guns. Write for Bulletin 84.
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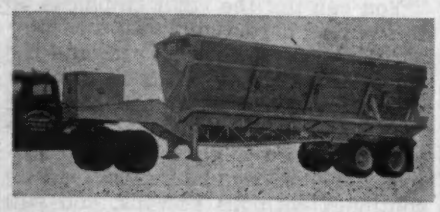
Write for Catalog 30.
SPRAYING SYSTEMS CO.
3214 RANDOLPH ST. • BELLWOOD, ILL.
WORLD'S LEADING DESIGNERS AND PRODUCERS OF FARM SPRAY NOZZLES

No. 5648—Side-Dump Body

A side-dump transport, manufactured by the Baughman Manufacturing Co., unloads from individual buckets into truck-mounted bodies and can be used for other big, heavy-



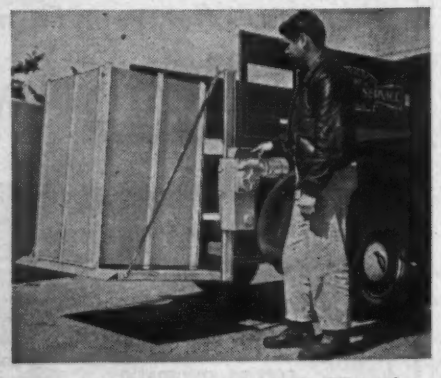
duty bulk transport assignments. The buckets can be raised or lowered by means of hydraulic rams, which are mounted on a monorail and moved into unloading position by means of a winch arrangement. The buckets are available with or without lids. The lids fold out during discharge to form a discharge chute. The company also manufactures a self-supporting hopper-type bottom dump utilizing gravity discharge and a hopper-type auger unloader body. Sliding gates in the body bottom control the discharge flow material in the gravity discharge system. In the hopper-type auger unloader body, a divided auger in the bottom carries the material to the center-of-body vertical discharge auger. Secure more complete details by checking No. 5648 on the coupon and mailing it to this publication.

No. 6542—Applicator Kit

Details of an applicator for water soluble fertilizers and other emulsifiable chemicals are announced by the Manco Chemical Co. The applicator is composed of a complete kit that includes a syphon-principle applicator, applicator hose and spray nozzle. Company officials state that the unit is "inexpensively made of polyethylene with a standard thread, attaches to the end of a garden hose and mixes tap water with concentrates in a gallon jug, bucket or other container." The nozzle has a wide opening to permit the free flow of solution regardless of varying water pressure. A sample kit will be forwarded on request. Check No. 6542 on the coupon and mail it to Croplife.

No. 5652—Tail Gate

An electric tail gate for trucks, called by the trade name, "Jiffy-Lift," can lift up to 600 lb. in 15 seconds, it is claimed by the manufac-

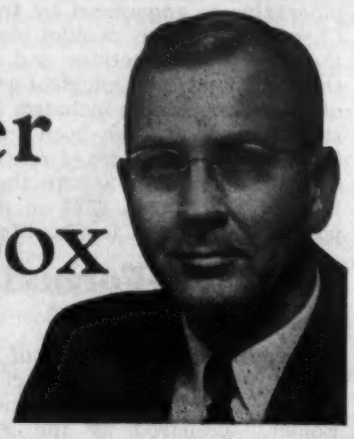


turer, Mid West Body & Manufacturing. The tail gate's motor is reversible; it has a built-in motor brake and the heavy duty push button control has a built-in lock for security. The all-steel ramp unit weighs 225 lb. and is designed for ½- and 1-ton trucks. All moving parts run on ball bearings. The unit is designed to permit the truck to operate within its present license fee. The tail gate is delivered completely assembled and ready for installa-

The Bulletin Board

No. 24 in a series from the Spencer Chemical Magazine, "Today's Fertilizer Dealer"

The Spencer Question Box



Edited by

Proctor Gull

Chief Agronomist, Spencer Chemical Co.

"The Question Box" is one of the most popular features of TFD, Spencer Chemical Company's magazine for fertilizer dealers. Questions submitted by dealers are answered by Proctor Gull, head of Spencer's 7-man field agronomy team. Here are a few timely questions and answers from recent issues of TFD.

1. QUESTION: Wouldn't it be better if "Mr. N" Ammonium Nitrate were not acid-forming? Could this be done? —C. D. Ridley, V-C Fertilizer Co., Lexington, Ky.

ANSWER: Yes, any ammonium nitrate could be made non-acid forming. However, to do this would reduce the nitrogen content of the material and would increase the cost of manufacture. The net result would be an increase in the cost of the nitrogen.

This increase would show up in two ways—one, in increased cost of manufacture, and also in increased freight cost per ton of actual nitrogen moved.

Liming materials are generally so inexpensive as an acid-correcting medium that it is much more economical to use high-analysis fertilizers (even though they are "acid-forming"), and apply lime to the soil to correct acidity, than it would be to add lime to a fertilizer material solely to correct the acid-forming properties of the material.

Soil acidity comes about by several processes: Leaching and weathering, plant growth and, too, certain soils are acid because the materials from which they are derived were acid. There is much confusion concerning the so-called acid-forming properties of some fertilizer materials. Phosphoric acid is acid-forming because it is introducing acid directly to the soil. Ammonium nitrate, urea, anhydrous ammonia and ammonium sulfate are said to be acid-forming materials. But these first three are either neutral or strongly basic when they are first applied to the soil. The natural processes in the soil change ammonia to nitrates, which form nitric acid. When these materials are leached from the soil in the nitrate form, they take with them basic materials such as calcium, magnesium, potassium or sodium and, in so doing, leave the soil more acid, because the natural acid-forming processes of the soil replace the bases that have been taken out.

Plant growth is also an acid-forming process, since plant growth takes from the soil bases such as calcium, magnesium and potassium in considerable quantities. These bases are also replaced in the soil by the natural acids that are formed as a result of plant growth.

Most so-called neutral fertilizers that carry acid correcting materials are not generally the answer to acid soils. These materials do not carry sufficient liming qualities to correct the natural acidity of the soil and at the same time off-set the so-called acid-forming properties of the fertilizer material. In the long run, therefore, liming would have to be carried out to correct soil acidity even if the material used were non-acid forming! The farmer would then pay a high price per pound of nitrogen and still have to use lime to correct the soil acidity caused by other factors.

Some materials marketed in your area today are advertised as non-acid forming, which contain some element other than calcium, such as sodium. These materials may be non-acid forming, all right, but such elements as sodium are non-essential plant nutrients, and are a poor substitute for lime. Prolonged use of such materials could lead to difficulties in crop production.

It all boils down to the fact that there really is no substitute for lime. That's why we do not think it is to your customer's advantage to produce a non-acid forming ammonium nitrate.

2. QUESTION: We raise a lot of watermelons in our county. What kind of fertilizer should we use?—LeRoy Wood, Security Elevator, Solomon, Kansas.

ANSWER: General recommendations are 25 to 50 pounds of nitrogen (75 to 150 pounds of ammonium nitrate) per acre, and 250 to 500 pounds per acre of 10-20-0 or 10-20-10, all applied before planting. An additional 100 pounds of ammonium nitrate is recommended at vining.

To Fertilizer Dealers ONLY

SPENCER

Spencer Supplies the Nitrogen

SPENCER CHEMICAL COMPANY
609 Dwight Building
Kansas City 5, Missouri
Gentlemen: I am a fertilizer dealer not presently receiving Today's Fertilizer Dealer magazine. Please send me a free subscription without obligation.
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Firm.....
Post Office.....State.....

tion. Secure complete details by checking No. 5652 on the coupon and mailing it to this publication.

No. 6547—Piperazine Booklet

A recently published booklet on piperazine is announced by the Dow Chemical Co. The booklet describes the properties, reactions and uses of the compound. Toxicological and handling information is included. Piperazine derivatives have been tested as fumigants, insecticides, fungicides and antimicrobials. Secure the booklet by checking No. 6547 on the coupon and mailing it to Croplife.

No. 6546—Formulator's Folder

Formulators of all types of insecticides may secure without charge a publication entitled, "Pyrenone Facts Folder," prepared by the Fairfield Chemical Division of the Food Machinery & Chemical Corp. The contents include sections devoted to time-saving helps, resistant insects, household products, dairy sprays, garden and truck crop insecticides, livestock sprays and powders, food handling and processing, aerosols and pressurized sprays, condensed product data and specifications for the company's products. Formulators may secure the folder by checking No. 6546 on the coupon and mailing it to Croplife.

No. 6544—Methallyl Chloride

Methallyl chloride (3-chloro-2-methyl-1-propene) is now commercially available as a new product of Food Machinery & Chemical Corp.'s recently formed FMC Organic Chemicals Division. Methallyl chloride will be found of interest for synthesis of monomers, insecticides, fungicides, fumigants and pharmaceuticals as well as for general use as an organic intermediate. Check No. 6544 on the coupon and mail it.

EMPLOYEE RELATIONS

(Continued from page 9)

this?" Or, "Do you have any good ideas on this?"

Yes, and in Addition: This word magic is employed by plant supervisors to smoke out the employee's real complaint or gripe. It shows agreement with the employee's ideas, but it asks a question which will tend to bring the real reason for the complaint out into the open. It will be strong word magic for you if you get the right inflection into your voice as you ask, "Yes, and in addition . . ."

You can put the right emphasis on this phrase if you will state the "yes" part in a positive way. Then, add the "in addition" with a question mark in your voice. Then wait. This pause with an expectant look will encourage your employee to give you more reasons for his complaint. And, as he continues with his reasons, you will be able to spot the "real" reasons for his complaint.

To make this word magic work best for you, you will need to develop the attitude that the first complaint an employee raises in not necessarily his real complaint. Thus, you will be sincere in wanting him to continue . . . to give you the "in addition" part of his complaint. It will require a little practice to master this word magic, but it will pay you handsome dividends for years once you have it down pat.

We, We, We: One of a supervisor's main tasks is to build a spirit of cooperation in his department. Top management wants it. Employees like their work better when there is plenty of friendly cooperation in the department. And, supervisors will find their work easier when they build this spirit of cooperation.

"We" is the word magic to use to develop this spirit. It puts the employees into the act . . . makes them feel like they belong to the profit team. They will take pride in accomplishment. They will feel they will get a share of the credit for all accomplishments.

One pitfall of the use of "we" in employee relations is that it should be used to include the employees . . . not to include just other supervisors or top management. When "we" is used in place of "I" it defeats its purpose as word magic for building better employee relations in a store or plant.

ALFALFA ACREAGE UP

BLACKSBURG, VA.—Alfalfa acreage continues to increase rapidly in Virginia—up to 240,000 acres by the end of 1956, says John F. Shoulders, associate agronomist at Virginia Polytechnic Institute. This was an increase of 20,000 acres from 1955 and an increase of 115,000 since 1950.

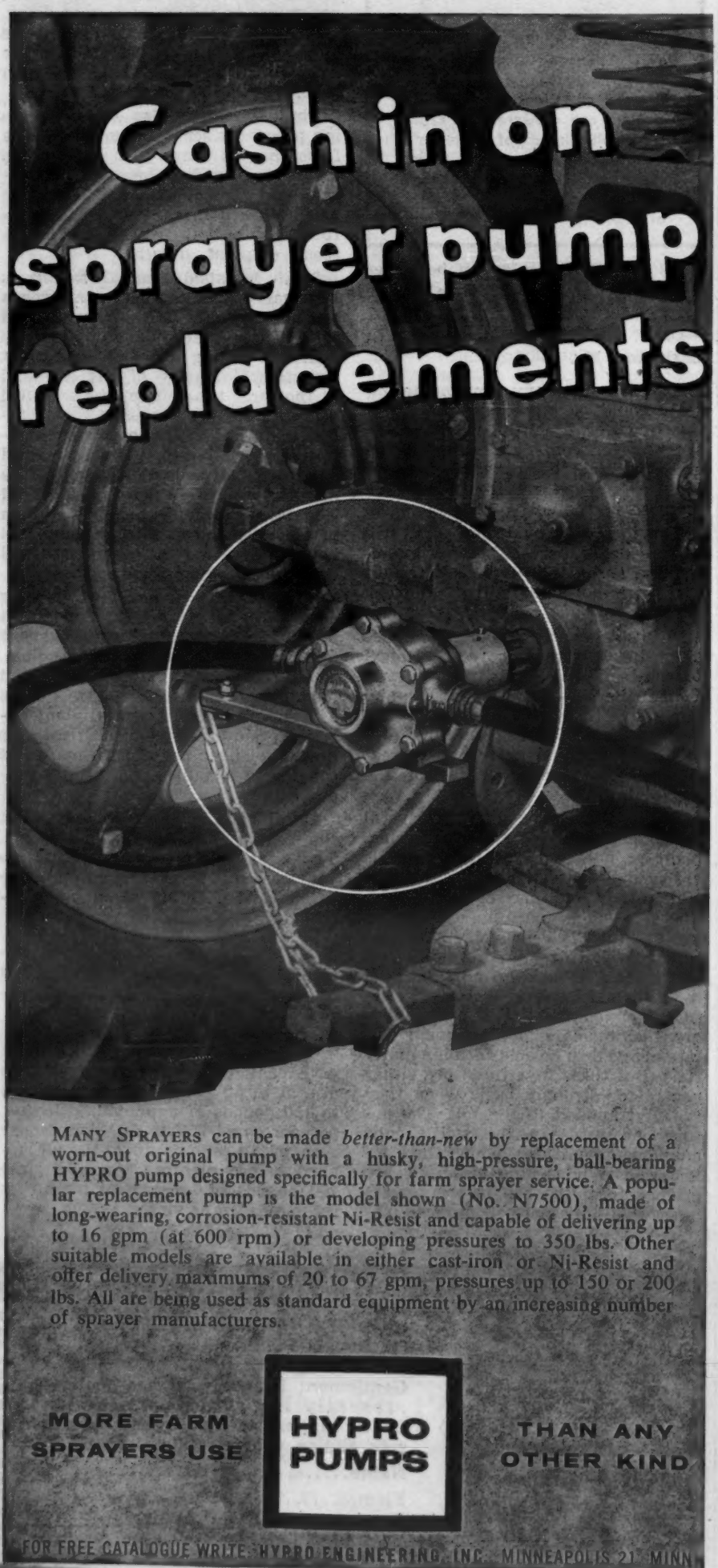
RINGING THE CASH REGISTER

Want Cards Useful

Retailers who have tried a system of "pocket want cards" generally speak highly of its value in preventing "outs" in stores handling a variety of products for farm and ranch use. The card is usually of fairly stiff stock and of a size convenient for placing in the shirt or jacket pocket. The card is ruled so that the salesman can jot down items sold out, low stocks and special requests. A new card is suggested for each day and at the end of each day the notations on the card can be transferred to one store "want book" where all the information can be assembled. Retailers who like the "want card" system say that many time-wasting steps are saved by their sales personnel and that seldom does the store lose a sale because the item requested has been sold out.

Bell-Ringer Promotion

A California hardware store attracted good-sized crowds of shoppers during its anniversary sale with a "bell-ringer" promotion. Two groups of bell-ringer items were offered—one consisted of specials and the other of free merchandise. Two alarm clocks were set to ring at different intervals during the three-day sale. At the sound of the bell, a shopper standing near the cash register became a winner. No purchases were required to participate in the free drawing for merchandise. Gifts were selected by drawing envelopes from one of two stacks at the register. One stack was for men, the other for women. Other bell-ringers offered special merchandise at reduced prices.



MANY SPRAYERS can be made *better-than-new* by replacement of a worn-out original pump with a husky, high-pressure, ball-bearing HYPRO pump designed specifically for farm sprayer service. A popular replacement pump is the model shown (No. N7500), made of long-wearing, corrosion-resistant Ni-Resist and capable of delivering up to 16 gpm (at 600 rpm) or developing pressures to 350 lbs. Other suitable models are available in either cast-iron or Ni-Resist and offer delivery maximums of 20 to 67 gpm, pressures up to 150 or 200 lbs. All are being used as standard equipment by an increasing number of sprayer manufacturers.

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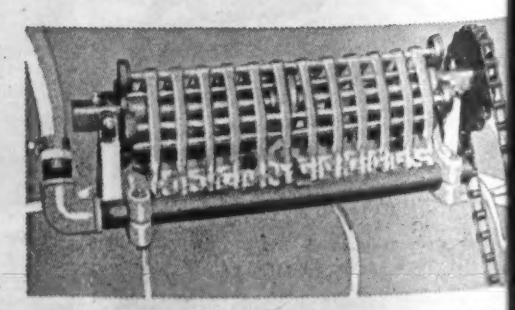

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FARM SERVICE DATA

Extension Station Reports

Every dollar intelligently spent on ltivated pasture fertilization will turn from two to ten dollars, says M. Trew, Texas A&M extension sture specialist, and he cites a soil st as the smartest one-dollar ex- nse toward fertilizing pastures roperly.

Pastures, like all other crops, re- ire adequate plant food, says the ecialist. Plant food in a ton of grass y contains about 30 lb. nitrogen, 10 . phosphoric acid, and 30 lb. potas- um, while a ton of legume hay con- ins about 25% more N, P and K, r. Trew says.

A soil test is the best means of etermining fertilizer requirements, Mr. Trew says, and adds that it is ot uncommon to double pasture nd meadow yields with good fer- ilizer management. Properly ferti- ized pastures make it easier for tock to make economical gains, maintain body weight and avoid alving or breeding trouble, he says.

Mr. Trew warns against surface pplications of nitrogen without ade- uate soil moisture and adds that dry rtilizer containing nitrogen can use burning when applied to plants et from dew or rain. With tem- orary pastures it's best to band hosphate and potash into soil either head of or at planting, but they may e applied during renovation or cul- vation in case of permanent pas- ures, Mr. Trew says.

The specialist says warm season rasses such as Bermuda or Dallis- rass in permanent pastures may be rtilized either in early spring just efore or at the time these summer lants begin growth or at fall and inter cultivation or renovation. He ys 30 to 60 lb. of actual nitrogen er acre may be applied each time lants are grazed down, provided suf- cient moisture is available for added lant growth. Cool season grasses uch as fescue should be fertilized in he early fall ahead of the growing eason. Mixed fertilizers should be ap- lied on temporary pastures, Mr. rew says, before or at planting time.

★

Based on tests made by the U.S. orest Service, benzene hexachloride nd dieldrin have been found effective or protecting young pine seedlings gainst pales weevils. Both insecti- ides can be used as sprays for treat- g the soil around the seedlings and ieldrin is also effective for dipping eedlings before they are planted.

Work conducted by the Forest Ser- ice at its Southeastern Forest Ex- eriment Station in Asheville, N.C., ndicates that use of either benzene exachloride (BHC) or dieldrin hould make it possible to plant seed- ngs in pine areas where pales wee- ils are present. Pine seedlings along he eastern coast and as far west as exas are attacked when planted the rst summer after cutting or after res.

Adult pales weevils are dark red- dish brown beetles about ¼ to ⅜ inch long. They feed on the tender bark of young seedlings, girdling and killing the plants. They develop from eggs laid in roots of dying trees or fresh pine stumps where the grubs feed on the inner bark of the stumps or the sapwood of the roots where the bark is thin.

If planting is delayed a year, fewer ggs are laid in the stumps and fewer nsects feed on the seedlings. But the elay means lost growth time, and in- reased planting costs because hard- ood species invade the planting ites. An insecticide that successfully controls the pales weevils means that pine planting can follow immediately after cutting or after a fire.

★

Sodium and minor elements should be added to most fresh water fish ponds of South Carolina to make them more productive, according to Dr. H. P. Cooper, agronomist, South Carolina Agricultural Experiment Station.

He says the limited and unsatisfactory production in around 75% of the more than 12,000 fish ponds in the state makes it highly desirable to develop better fertilization and other cultural practices for these ponds. He suggests that this may be done through integration of available fundamental chemical and physiological information on plant and animal nutrition.

Dr. Cooper says the unproductive conditions in most fresh water fish ponds in the state can be corrected through the application of sufficient lime to regulate the pH of the pond water, or preferably an application of basic slag to correct the pH of the water and to add minor nutrients, and by the application of sodium in the form of nitrate of soda or common block salt in combination with recommended mixed fertilizers.

"It is not likely that any combination of fish pond cultural management practices will be very effective in increasing the production of fish where there is an inadequate supply of sodium to meet sodium requirements of the particular type of fish," he states.

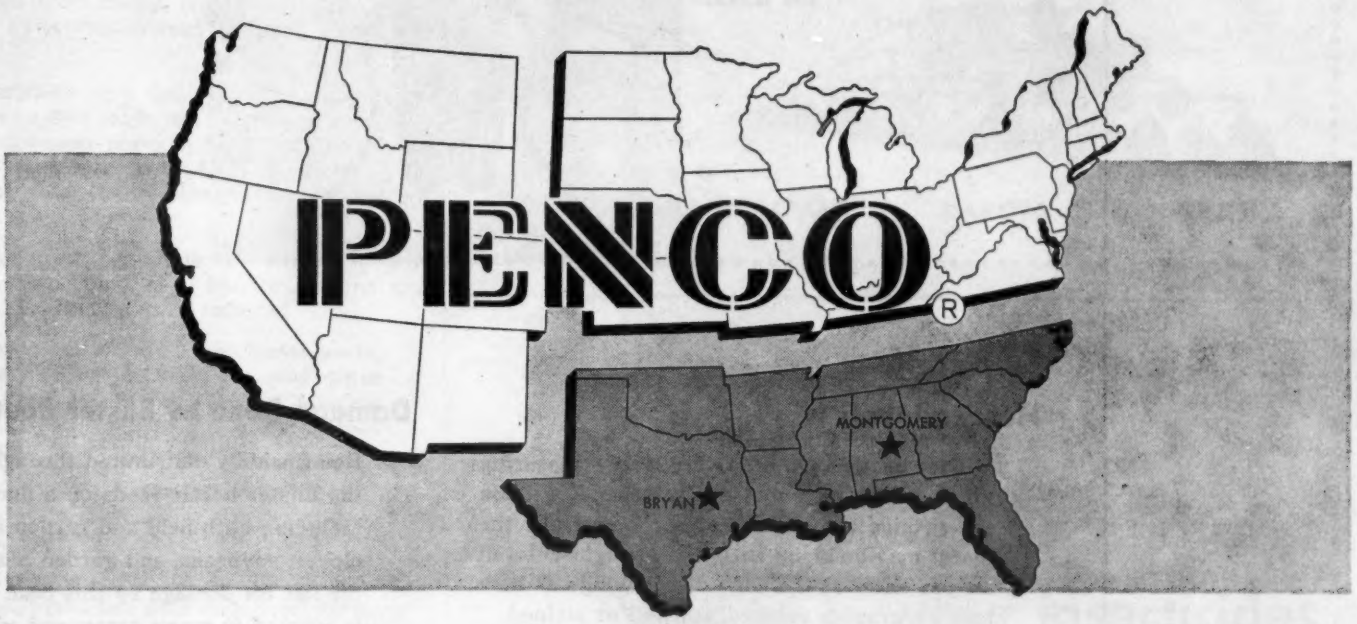
He points out that the recognized sodium requirement of animal life is reflected in some of the common practices such as the ever-present salt shaker on the dining table and the necessary salt supply for the common farm livestock.

"Recently we have introduced fish culture as another form of farm livestock, but no one seems to have given serious consideration to sodium requirements of the fish in fresh water culture," Dr. Cooper said. "The commonly recommended low-potash fish pond fertilizer ratios of 4-4-1 to 3-3-1 in such analyses as 8-3-2, 8-8-4, 10-10-5, or 12-12-4 grades is in agreement with the relatively low growth response expected from potassium in the fish pond fertilizer. Most of these currently used fish pond mixed fertilizers contain little or no sodium.

"In order to obtain optimum grades of fish pond fertilizers, it will be necessary to supplement the low potash ratio value with enough sodium to obtain a combined potash sodium comparable to or the equivalent of the potash ratio value commonly recommended for most higher forms of crop plants rooted in the soil.

PENCO

AGRICULTURAL CHEMICALS



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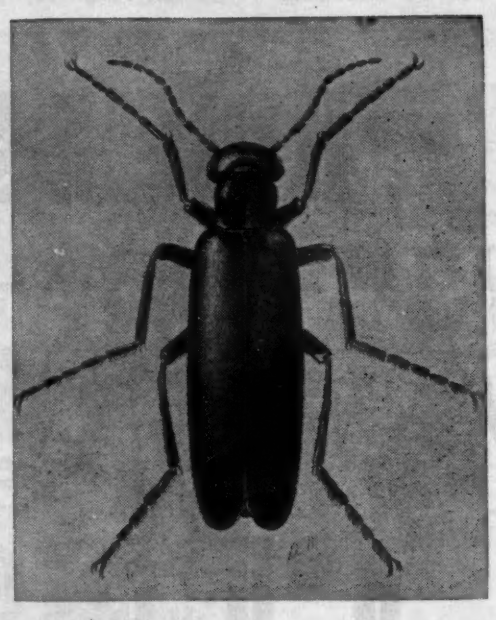
BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Blister Beetle



How to Identify

Blister beetles are relatively large, measuring up to a full inch in length. Depending upon the species (of which there are several), the insect may be black with narrow light-colored stripes on or at the edge of the wings. Others may be grayish colored, spotted or striped.

Habits of Blister Beetle

The life histories of all species of blister beetle are not known, but those about which information is available, spend the winter months in the larval stage. While in the larval stage, some species actually serve mankind as destroyers of grasshopper eggs. In a given year, some species of blister beetles have two generations, others only one. Females lay their eggs in the soil in groups up to 100. In ten days to three weeks, the eggs hatch into larvae which dig through the soil looking for grasshopper eggs which they eat. The development of the insect from this stage is complicated. It molts four times, undergoing entirely different changes, emerging at last as an adult which attacks many varieties of plants.

Damage Done by Blister Beetles

Being widely distributed throughout the U.S., the blister beetle feeds on a number of crops including both field and garden areas. Alfalfa, clover, soybeans, and garden plants are all on the list for damage by this pest. Plant growth is stunted in many cases, and yields reduced. On the human side, the beetle, if crushed on the skin, will cause blisters to arise on the spot, hence its name.

Control of Insect

When crops of considerable value are infested with blister beetle, various controls recommended include chlordane as a spray; mixtures of cryolite and DDT are also effective for control. The DDT may be substituted by 75% dusting gypsum, with good results. These insects are not easy to control with arsenicals, since they appear to be resistant to these insecticides. The beetles are also repelled by the presence of bordeaux mixture on plants. In small gardens, it is possible to knock off the beetles by hand into kerosene, which kills them.

Illustration of blister beetle furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Rep. E. C. Gathings (D., Ark.) introduced a bill in the House that would exempt truck fertilizer shipments from Interstate Commerce Commission regulations as to rates. The bill would also grant return haul licensing of motor vehicles by farmers, private carriers, and independent truck operators. The bill would give the farmer an opportunity to offset higher rail freight rates which are steadily rising, on plant foods.

The National Agricultural Chemicals Assn. held its annual spring meeting at the Fairmont Hotel, San Francisco, with more than 300 registered. Promising new areas for pest control, including highways and forest lands; talks on credit conditions within the industry; and an analysis of the agricultural chemical trade on the basis of return on investment highlighted the three-day meeting, March 6-8.

The number of acres of cotton land signed up in the soil bank plan was expected to be short of the previous estimates of 4 million. USDA officials said that the cotton land put into the acreage reserve program may exceed 5 million, however.

An article by A. H. Bowers, Swift & Company agronomist, pointed out that the low prices of fertilizer may be a detriment to the industry in the long run, because the low margin leaves little to plow back into research, development, and promotion of plant food.

That a great additional potential exists with reference to the use of pesticides and fertilizers on cotton was brought out at the Western Cotton Production Conference at Phoenix, Ariz. Attended by more than 500, the meeting featured talks by prominent entomologists, plant pathologists, and agronomists. K. P. Ewing, in charge of the cotton insect section of USDA, Beltsville, Md., said that hard-to-kill insects do not inhabit every part of the cotton states, although evidence indicates that resistance of pests is a continuing problem.

A tolerance of 7 parts per million was set by the Food & Drug Administration for DDT in or on the fat of meat from cattle, hogs and sheep, and sweet potatoes from postharvest use. FDA emphasized that no tolerances have been set for DDT residues in milk.

The possibility of transporting phosphate rock from Florida via rail, in connection with rail shipments of coal into that state, was discussed at a conference in Washington. . . . Treatment of insect pests in field crops gave Illinois farmers $7 million above cost of treatment in 1956, H. B. Petty, University of Illinois extension entomologist, said at the Illinois Spray Operators School.

Arkansas was added to the soybean cyst nematode list when the pest was found in one county in that state. Two counties in North Carolina and one each in Tennessee and Missouri are also known to be infested.

Promising new areas for pesticide consumption are forest pests, turf pests, weed control programs, control of termites and other household pests and nematodes, Fred W. Hatch, Shell Chemical Corp., president of the National Agricultural Chemicals Assn., said in keynoting the NAC spring meeting in San Francisco.

The mine and refinery of National Potash Co. began operation at Carlsbad, N.M. These facilities had been two years under construction at a cost of approximately $17,500,000. Designed capacity is 400,000 tons a year of high grade muriate of potash.

Doane Agricultural Service, Inc. predicted that American farmers will buy a million more tons of fertilizer in 1957 than they did the previous year. This statement was based on a survey made by the Doane firm which indicated that farmers plan to buy 4.7% more fertilizer this year, as compared to the 1956 season.

Southern Nitrogen Co., Inc. began producing ammonia at its Savannah, Ga. plant in February. Plans called for the production of solutions in March and of solid ammonium nitrate in April.

The Middle West Soil Improvement Committee held its ninth annual meeting in Chicago in February, with an attendance of more than 500 agronomists and industry representatives from a wide area. Speakers included representatives of the industry and of the land grant colleges in the 13-states comprising the Committee's area.

Congress appeared to be making no headway in February, toward arriving at decisions on soil bank details. Fears were expressed that the delay would extend up to the time for farmers in most of the nation to plant their crops, thus complicating the over-all picture.

That the users of pesticidal chemicals should read labels and handle the materials accordingly, was emphasized at the meeting of the Colorado Agricultural Chemicals Assn. at Denver. Speakers represented the Food and Drug Administration, the state agricultural commission and the pesticide industry.

Fewer boll weevils have been counted in many cotton areas, but entomologists warned that hibernating weevils are still numerous enough to cause early-season trouble. Surveys were made in Louisiana, Mississippi, South Carolina, Arkansas, and parts of North Carolina. (Feb. 11, page 1.)

The California Weed Conference, held Jan. 22-24, attracted a record attendance of 600 to hear speakers from the University of California, the chemical industry, and agricultural experiment stations describe methods and materials for controlling unwanted vegetation. (Feb. 11, page 6.)

Brea Chemicals, Inc., Los Angeles, named Robert G. Hickle as assistant manager of agricultural chemical sales, as part of a general reorganization of its marketing area. Sales districts were increased from five to eight in the move. (Feb. 11, page 18.)

Keith Landsburg, Fennville, Mich., was elected to head the Michigan Insecticide-Fungicide Institute for 1957 at a recent meeting of the group.

18,500 Soil Fertility And Testing Leaflets Distributed in Maryland

WASHINGTON — Widespread interest by Maryland farmers and bankers in soil fertility and soil testing has resulted in a record disposition of 18,500 leaflets, prepared by the University of Maryland, the Maryland Bankers Assn., and the National Plant Food Institute.

The leaflet, captioned "The Maryland Bankers Assn. Advocates Soil Fertility," was one of a series distributed and prepared in cooperation with land-grant colleges, state bankers associations and the Institute.

"The initial response was much greater than expected," A. Z. Gottwals, chairman, agricultural committee, Maryland Bankers Assn., said. "Within a few weeks after we had announced the availability of this leaflet, our supply was exhausted.

The leaflet, in addition to emphasizing that high per acre yields depend on soil fertility and high profit farms have high per acre yields, includes illustrations and instructions on how to take a soil sample.

Another project conducted by the Maryland Bankers Assn. in cooperation with the University of Maryland and the Institute features the distribution of advertising mats, which focus attention on the importance of soil fertility. The mats are used by country banks in local newspapers.

SOYBEANS FOR ALABAMA

AUBURN, ALA.—Soybeans can add extra dollars to many Alabama farmers' incomes, Jasper Jernigan, Alabama Polytechnic Institute extension agronomist, noted recently. He said that fertilie bottomlands in most areas of the state are ideal for soybeans and that with favorable weather conditions this crop would be profitable.

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AGCHEM BUSINESS ANALYZED . . .

Much Greater Return on Dollar Necessary to Bring Pesticides In Line With Other Industries

By F. C. SHANAMAN*
President, Pennsylvania Salt Mfg. Co. of Washington

In an industry such as ours, there doesn't seem to be any "best time" to make an analysis or to make comparisons. The number and the extent of variables with which we must contend will cause wide distortions, season to season, and for longer periods of time as well. To make matters more difficult there is a regrettable scarcity of facts and statistics to use as a back drop from which to judge how well our own company may be doing, or how well the agricultural chemicals industry compares to allied industries, or to industry at large.

At the moment we seem to be at some point in one of the valleys so typical of our peak and valley business. At such times, management appropriately becomes more conscious of simple standards relating to sales, profits and capital employed. While in one of these valleys, emphasis on sales volume alone will not guarantee satisfactory profit.

Furthermore, expansion of plants and broadening of distribution involves recognition of the necessity for earning more money on increased investments. Whereas comparisons may be difficult, these standards and other business "ABC's" can be touched upon and to an extent reviewed within the meaning of the subject which we are to discuss.

For several years the "Gossip Mill" has been claiming that our portion of the chemical industry has not been "doing so good" or at least not as good as we have done, nor as good as most of us would like to do. If there is any truth to these claims, it won't hurt to review a few fundamentals and perhaps a few related facts. The "Yankees" and the "Bums" are doing something similar at this time of year, so we will not be conspicuous by indugling in some Spring Training ourselves.

By way of preparation, a few ground rules might be appropriate. In the first place, agricultural chemicals industry wherever used will refer to the pesticide portion of the chemical industry. Second, return on investment will be before taxes and will refer to return on all of the dollars employed in the conduct of our business and not just to a portion of those dollars. Third, fixed assets, unless otherwise identified, will be undepreciated and un-written down dollars. Fourth, administration charges will include costs of research performed by or purchased by agricultural chemicals industry. Although not offered as a ground rule, it is hoped that you can accept the observation that more and more businesses are being operated from a professional management point of view requiring the responsibility by one individual for making a profit on the capital employed, whether it is the manager's own capital or capital entrusted to him.

No claim is made to authorship of the idea that the object of business, and this could include agricultural chemicals industry, is to make a profit. To some it may be a sordid term, but to most of us it means three meals a day and a car in the garage too, if we are in luck. It also gives reasonable assurance that there will be a job for tomorrow. Eliminate profit and in short order things begin to happen because regardless of well-told hard luck stories, the use of scintillating sales personalities, or the admitted disruption in the love-life of the bugs, those with money invested in agricultural chemicals, will, by necessity, compare their earnings with what is available to them elsewhere.

Recognition of profit motive in times such as these, contributes to the destruction of the system which supported the theory that the sales force takes care of sales, production people schedule and manufacture, and between them, somehow, a profit results after the usual additions and subtractions have been made at season's end. No plug for the professional manager is intended, although it is intended to point out that in recent years, industry seems to be accepting the principle that someone must be responsible for satisfactory return on capital necessarily employed.

Maybe at times it appears facetious to refer to agricultural chemicals as a "business" because of its unpredictability. It has such peaks and valleys of activity, including profit and loss, that only the fearless or misguided are expected to be found among our associates. To use the term loosely, therefore, we include agricultural chemicals as a business and in doing so submit that it can be and should be judged by yardsticks, similar to those applied to other businesses or industries. These yardsticks may vary somewhat for those investing money, lending money, or using accumulated funds generated within a company, but it is axiomatic that each will want to know what the return on capital will be.

It makes no difference whether the concern is with the ability to repay the money plus interest; to build equity and earn dividends; or to accomplish certain objectives in the internal affairs of a company; a common denominator does exist and basically it is the factor of return; the very thing we are discussing. From the business experience all of us have had, is it not reasonable to say that percent return on investment is a reasonable yardstick for measuring effectiveness of capital necessarily employed?

Our capital, particularly that identified as current assets, is large by accepted standards of other segments of industry, and, therefore, it must be of real concern to us. Simply stated, percent return on capital employed is the percent of profit from sales multiplied by turnover and which is readily portrayed by the formula in which certain rounded figures are used for purpose of illustration:

$$\frac{\text{Net Profit \$100,000} \times 100}{\text{Sales \$1,000,000}} \times \frac{\text{Sales \$1,000,000}}{\text{Capital \$500,000}} = \text{\% return on capital employed}$$

10% x 2 equals 20%

Obviously, by dividing net profit by capital, we get exactly the same answer but by so doing we would be disregarding two rather important facts; first, costs and their relation to income from sales and, secondly, the importance of capital employed versus sales volume. This formula can be a workable tool, if we seek a quick and easy portrayal of what we are returning from our efforts and on our capital employed.

We know, of course, that decreased costs, increased prices or otherwise increasing net sales and reduction of the capital required will greatly assist in making improvements which may be sought. With regard to capital necessarily employed in the agricultural chemicals industry, these improvements are assisted greatly by better inventory control, reduced accounts receivables, better use of generated cash, and more careful consideration of additions to fixed capital.

It might be appropriate here to make a few observations which may be pertinent. Bigness in agricultural chemicals, in one form or another, is sometimes desirable, but is not necessarily a panacea for what may be wrong, nor will it necessarily accomplish what may be desired. Furthermore, without more than mere consciousness of the word "obsolesence," a company engaged in agricultural chemicals, particularly at the basic producing level, can have unfortunate experiences.

The quantity and quality of research being conducted by the chemical industry, internationally speaking, is such as to make the factor of obsolesence extremely important. It can adversely affect profits during the years when rapid write-offs are being taken, but regardless it is a hallmark of good practice in this business to take such write-offs if the company is involved with newer type pesticides.

As plants and products become obsolete, a company usually executes an orderly retreat and does so more rapidly than the decline of product or products in the market place. Not to do this makes the company more than a spectator at the funeral—it becomes a participant in the ceremony. As a product reaches the end of its life cycle, orders are scattered, irregular, and turn more and more toward unprofitability.

It has also been observed that when we are experiencing one of our agricultural chemicals economic down-swings, the climate is inclined to turn from cool to frigid with respect to new capital. In a diversified company, each dollar requested for agricultural chemicals is judged more critically than before as to its ability to earn in comparison with other company activities. Outside capital shows neither great enthusiasm nor willingness to invest, and borrowed money is difficult to come by except under terms and interest rates which seem to reflect a knowledge of what happens to us during one of these bilious periods. The chances are that cost reduction alone won't give improvement desired and reduction in capital employed may come hard because of competition.

If we attempt to compare ourselves with industries such as coal, steel, lumber, or perhaps other segments of the chemical industry, we must admit to our complete immaturity in the way of statistical data. This is broadly true of all groups within agricultural chemicals. It is hard to decide whether we are suspicious of one another, do not keep records and hate to admit it, or just do not believe in the disclosure of basic facts and figures to the extent practiced by contemporary industries. Suffice it to say, the great data famine makes it extremely difficult if not almost impossible, to prepare a factual talk on a subject such as the assigned. However, with some excellent cross-section assistance and advice and with the support of some very general data, we feel reasonably certain that the following data are in the "ball park" when talking about our industry as it is today.

In the case of national formulators, our guess is that better than 50% of them are earning less than 4% on sales before tax. Out-of-pocket costs are probably 70-90¢ on every sales dollar, leaving little to cover fixed costs and provide a profit. Total capital required is high, amounting on the average between 70 and 75¢ for each sales dollar. The major investment is not in plant and equipment but in current assets, namely inventories and accounts receivable.

In the case of inventories, there are raw materials, packages, labels, intermediates and concentrates and finished products which frequently accumulate in large amounts because of the seasonal nature of the business. Furthermore, inventories of finished goods are found outside of producers' warehouses in bonded warehouses and in the warehouses of resellers as owned or consigned stocks. In some cases formulators consign their labeled products made from consigned raw materials or concentrates and the supplier of the raw material or concentrates thereby extends the consignment to the dealer or the grower level as the case may be.

In certain instances inventory placed in resellers' warehouses is not only consigned, but the owner pays the reseller a storage fee. The evident effect of such practices is to increase the number of dollars tied up in inventories, increase the cost of goods to be sold, and considerably increase the paper work for the seller.

In the case of accounts receivable, our record is abnormally high when compared to the average of all industries. Terms of 30 days net are the exception, rather than the rule. Invoices made at time of shipment carry 30 day terms, but frequently, by agreement, payment is not required for 60-90-120 days, or longer. In other instances, invoicing is actually delayed for 60-90 days or 120 days beyond time of shipment, and after making use of such liberal credit, the buyer still has 30 days in which to pay. To make matters worse, the invoice price is the price at time of shipment, but protected against decline.

We also have an industry practice of "crop terms" which fortunately, in the past, has not been widespread but which seems to be growing. This practice usually calls for invoicing at time of shipment but payment is not required until the end of the season and after the customer has sold the products for which the sellers' goods have been required and used. In such cases also, prices are reported to be guaranteed against decline.

If the foregoing observations are a reasonable economic base from which to take off, it would seem to indicate little room for price concession, particularly if we consider the high out-of-pocket costs and substantial need for current and fixed capital. In many instances it can be assumed that freight could be the difference between a profit and a loss although it has been surprising to find that industry records are woefully inadequate to guide sales managers in evaluating profitable products or areas. Investigation tempered with a measure of experience, discloses little room for heavy or extravagant overhead or costly administrative procedures. It is also evident that because of low ratio of fixed assets the agricultural chemicals industry has little to gain by pricing to cover overhead.

An average manager in this industry is unquestionably faced with the fact that each of his sales dollars requires an investment of between 70 to 75¢. Long term credit along with practices used for credit extension are hard to justify if we consider accepted good credit policy, today's costs of money and low profit margins estimated to be prevalent throughout the industry.

Let us assume that there are some enjoying much higher profit margins than average. The picture for them doesn't look too good if we judge the effect upon their return on investment for a sale when soft credit terms are allowed. One

* From paper presented at National Agricultural Chemicals Assn. annual Spring meeting, San Francisco, Cal., March 8, 1957.

alyst has stated that a product owing a 40% margin provides y 10% return on an investment er four months on the sellers oks as a receivable.

Whether we agree with his arithic or not, it is safe to say that ollectible receivables even on high gin sales have tremendous effect both investment and return on tal necessarily employed. An obvation can be made at this point many times it probably would better business judgment to risk loss of a sale rather than carry essive inventory or grant such ral terms that they would be diffi- to duplicate with institutions up for the purpose of lending ey.

ased on available data from a nber of sources, one can picture a cal firm which we will call the ndom Agricultural Chemical Co." uming it had a sales volume of million, with the cost of sales ing to $9,200,000, earnings thus ld be $800,000, which, divided by s, would give a figure of 8% nings as percent of sales. Sales of million divided by a total investt of $12,600,000, gives a turnover .79. The 8% earnings as percent ales multiplied by 0.79 turnover, s a return on investment of 6.2%, ore taxes.

n order to bring the Random Agriural Chemical Co. in line with average for all industries with ect to return on investment, it ld be necessary to reduce sales penses by 15%, administrative s by 10%, and inventories by . Accounts receivable would have e reduced 33%.

By reducing cost of sales by 00,000 (2%), earnings would n be increased to $1 million (as ainst $800,000 in the other exple) and earnings as percent of les would be raised to 10%. This, ultiplied by the turnover of 1.05 uld make the return on investent 10.5% before taxes as comred to 6.2% in the other case.

While looking at these data, it ht be appropriate also to reflect n the effect that an agricultural micals activity has upon the reof invested capital for a diversi- chemical company. Suppose this pany was average and, therefore, approximately 15% earnings on s with a 1.01 turnover on capital. return on the dollars necessarily loyed would be 15.2%.

this company had 25% of its l sales in the form of pesticides if, at the same time, these sales e average for the agricultural micals industry, the profit on s for the entire company would be uced from 15% to 13.25% and the nover would have dropped from to .947, resulting in a return on ital employed of 12.55%.

Under such circumstances, the disified chemical company would e reduced its return on its investdollars by 18%, assuming, of rse, that these dollars could have n used in other phases of the pany's business, at comparable e of return. To put it another way, this diversified company wanted average return for the chemical ustry of 15.2% and, at the same e, wanted to continue with the nufacture and sale of pesticides, latter would have to produce 19% fit on sales of pesticides to offset low turnover rate of only .8, ch is typical of the agricultural micals industry.

n an industry with major segnts paying as much as 7% of sales research and development, inding expenditures for tolerances er the Miller Bill, as compared ess than 2% for the chemical inry and allied products, it has important to know how such e expenditures are handled in or- to evaulate return on total capinecessarily employed. Admittedit has been difficult to assess these s but we did notice that when expense is added into adminis-trative and sales costs, it had the effect of reducing return on investment by 10% to as much as 20%. Obviously, to know what is being earned by agricultural chemicals, such important items as research and legal expenses must be included.

Referring again specifically to formulators, the average percent of profit is so low as to indicate a necessity to look for the opportunity to reduce manufacturing costs, raise prices, eliminate low margin items, alter formulations, and eliminate sales in unprofitable areas.

For the industry, better management extended right down the line to the grass roots would be good medicine. This would include, but not necessarily be confined to better inventory controls, improved credit policies and rendering of sound and reasonable service to customers to the extent that it could be afforded in the face of then existing competitive conditions.

Ways Studied to Conserve Storage Water

EMERY COUNTY, UTAH — Utah State Agricultural College scientists are experimenting in this dry southeastern Utah county to find better means of conserving water.

From studies made to date it appears that many of the new synthetic materials offer possibilities for increasing efficiency for storage in reservoirs, the specialists point out.

As a part of this program plastic films have been tested to determine their resistance to weathering and other factors which influence durability of these films as linings for farm reservoirs.

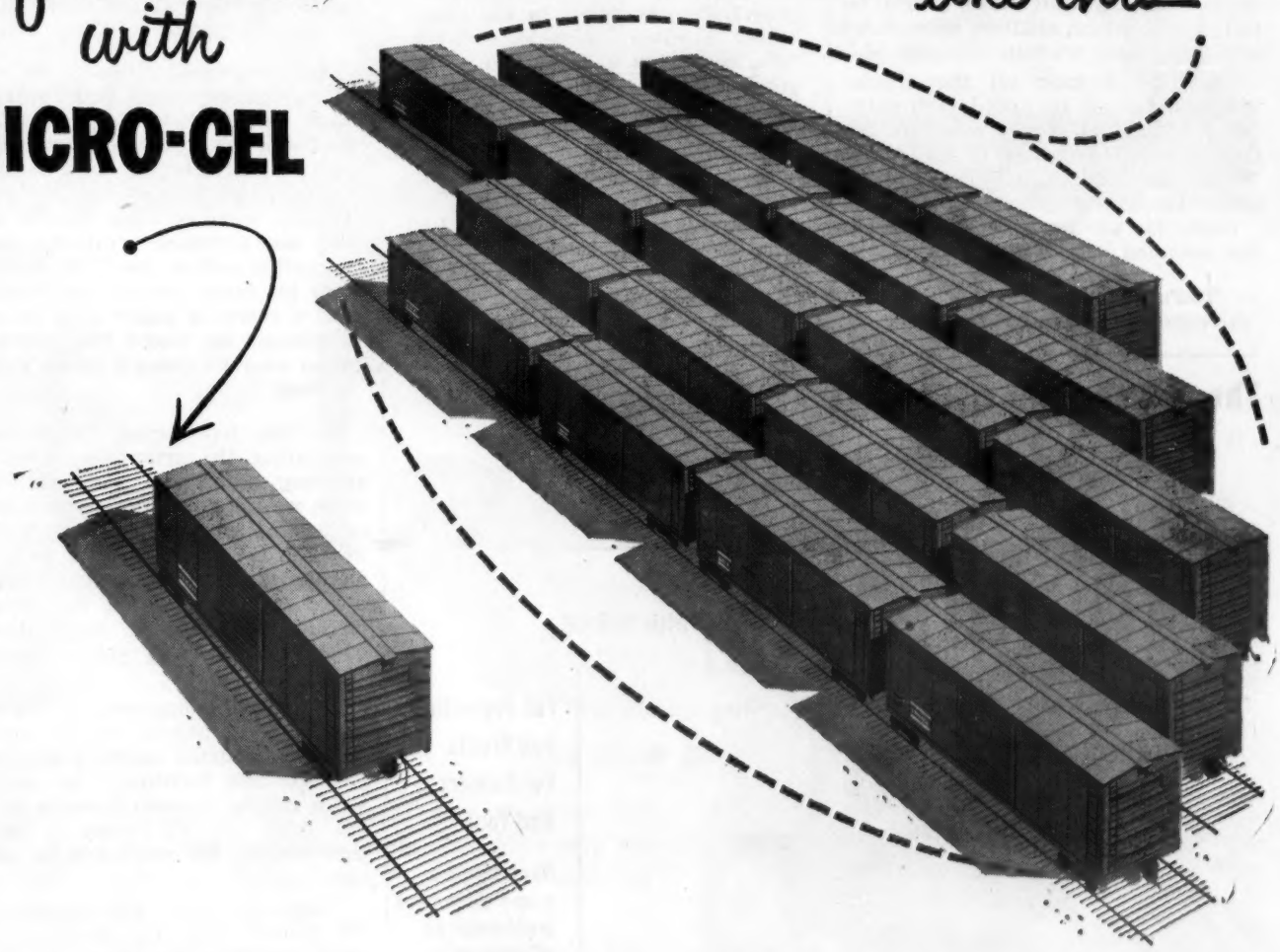
Early in 1956 an Emery reservoir was lined with olive green vinyl. Before lining, the reservoir had to be refilled every week or ten days. Now, over a year later, the specialists say, the lining has been effective in controlling water losses.

Frontier Buys Interest in Rare Earths Chemical

WICHITA—The Frontier Chemical Co., Wichita, has purchased a controlling interest in Rare Earths Chemical Co., Inc., Mead, Colo. Announcement was made by Wesley H. Sowers, executive vice president of Frontier.

Louis M. Sherman, assistant to Mr. Sowers, said acquisition of the Colorado company opened a new field of research for previously unknown metal alloys. Some of the products of Rare Earths Chemical Co. are ytterbium, praseodymium, neodymium and europium, none of which is well known commercially, but all are now being developed for commercial use. They are used in magnesium industries, as catalysts in petroleum refining, glass manufacture and in paint and pigment industries.

This shipment of 50% Heptachlor concentrate formulated with **MICRO-CEL** —can provide application quantities like this



The advantages of formulating insecticide dusts at the higher concentrations obtainable with Micro-Cel* is graphically demonstrated by the freight cars above. One car of 50% Heptachlor when let down to a 2½% poison at the point of application produces the equivalent of 20 cars of insecticide in the field. Since Micro-Cel costs no more than many other diluents, the substantial freight savings mean extra profits for you.

PROVEN WITH MANY POISONS

Micro-Cel, a new line of synthetic calcium silicates developed by Johns-Manville, has been tested and proven at such high dust and wettable powder concentrates as:

75% DDT	70% Toxaphene
75% Aldrin	75% Dieldrin
50% Aramite	50% Chlordane

Experiments with other poisons are under way today.

IMPROVES FLOWABILITY

Micro-Cel —"the powder that flows like a liquid"—reduces caking, increases flowability and gives more uniform coverage with dry dusts. Other important properties include large surface area, small particle size and high bulking action.

Ask your Celite engineer to help you adapt Micro-Cel to your particular requirements, or mail coupon below.

*Micro-Cel® is Johns-Manville's new absorbent-grinding aid designed specifically for the insecticide formulator.

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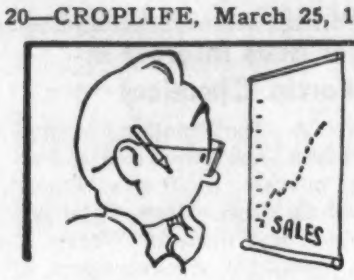

Doing Business With

Oscar & Pat

A deep frown settled on the broad forehead of Oscar Schoenfeld as his metal letter opener slit one envelope after another in the morning mail. The clock said eight thirty, and as Oscar glanced across his desk at the empty chair at his partner's desk, his lips tightened. Now he looked at his wrist watch to check that time with that of the electric clock on the wall. His own watch was off about a second, and so Oscar carefully adjusted it. He was always one to know exactly what time it was, and he was never late for work.

"Just think!" he exploded to Tillie Mason, the plump, nervous bookkeeper. "McGillicuddy's an hour and a half late now—and on Monday morning! He's getting worse and worse. Good thing there are some people around here who get to work on time and put in a full day!"

He went back to work, carefully taking all clips off letters and putting them into a large bowl on his desk. Someday that bowl would be full of clips which another, more careless man might waste.

Now Oscar took all the checks which had come in, noted each carefully, then took them over to the bookkeeper. He glanced at his watch. "8:45!" he exclaimed. "This is the limit. I'm going to telephone him."

Nora, his partner's wife answered. She sounded very sleepy.

"Pat's just getting up, Oscar," she said. "We were at Mr. and Mrs. Hagen's golden wedding last night and it got awful late before we got home."

"I was up late, too, playing schafskopf." Oscar said crisply, "but that didn't stop me from getting to work on time, at 7 o'clock. The business day goes fast, you know."

"Oh," said Nora in a subdued voice. "I'll tell Pat you're anxious for him to come down."

"He acts like a banker instead of a fertilizer dealer," Oscar said angrily to Tillie, after he had hung up. "Who does he think he is? Why—why, if I didn't watch the pennies around here, he'd be busted in a short time."

"But he does get a good idea once in a while," Tillie said timidly. "That—that true and false ad really got quite a few fertilizer orders, and—"

"Oh, farmers were ready to buy fertilizer anyway," Oscar snapped. "That ad didn't help too much."

It was almost ten o'clock when Pat McGillicuddy came to work, and his step was slow. He smiled cheerfully, sat down in his chair, stifled a yawn and said amiably, "Oh, boy, what a night! We didn't get home until 3 in the morning. I'm all tired out."

"Huh," said Oscar. "You got to get enough rest if you want to be any good for business the next day." And he glanced sharply at his partner, whilst sorting correspondence.

"It was Mr. and Mrs. Hagen's golden wedding and I never saw so many relatives and friends at any other party," Pat said. "That farmhouse is big, but it sure was crowded when they all got together. And sing—my fingers are sore from playing that old cello. But how those farmers wanted to sing—Irish, French, Scandihoovian and all kinds of songs. Nora must have played the piano for five hours, too."

"If you would work that hard at this business," Oscar put in sharply, "we'd do so well we could open branches in other towns."

Pat's blue eyes twinkled. "But I was working—only I didn't intend to. I only went to the party because John Hagen asked me; he knew Nora and I would play a little music for him and his friends. And eats. I can't look a cake or pie in the face for a week."

Oscar looked more irritated than ever. In fact, he was so irritated that he got up, took three already sharpened pencils to the sharpener and started giving them the works all over again. "You didn't want to work, but you did. What kind of monkey business is that? It just doesn't make sense."

Pat chuckled. "Oscar," he said. "I have always said that the right kind of night work pays off in business, too. I met so many farmers at John Hagen's and sang so many songs with them that pretty soon some of them started giving me fertilizer orders—and spreading orders, too." He reached into his inner pocket and brought out a stack of paper torn from a notebook. He tossed the crumpled mass over to Oscar's clean, orderly desk.

As the bewildered Oscar began separating the crumpled paper and spotting the orders, Pat said: "The more we sang, the more orders seemed to flow in without asking. I didn't ask for a single order, so help me, Oscar. But, of course when a farmer asked me if it would pay him to double his fertilizer application I couldn't help saying 'yes' in most instances."

Oscar was staggered by the tonnage of those orders, but his cautious nature reasserted itself. "I hope they pay for this fertilizer," he said. "I see a couple of so-so farmers in this list. After all, it's money in the till that counts. We can't live on promises."

"That we can't," Pat agreed, "but I'll collect from all of them. Just keep prodding me when the right time comes, Oscar. But it's sure a funny thing. I can sell more fertilizer when I visit with customers and laugh and joke with them. If I start out calling on farm to farm and try to be serious, I don't sell a darn thing. Friendliness counts, I guess. People seem hungry for it."

Oscar Schoenfeld left for lunch at 11:30, without saying a word. Pat looked at Tillie Mason and said, "Now that never happened before. I wonder where he's going?"

"I—I don't know," Tillie said, "but he looked kind of mad."

When Oscar got to his neat bungalow type home, he entered by way of the front door instead of via the kitchen. As Minnie, his wife, came hurrying forward, surprised to see Oscar at the front door, he beamed and thrust six beautiful red roses into her hands.

"For you, my good frau," he said, kissing her cheek and waltzing past to the kitchen where he whistled as he washed his hands.

Then he came to the dining room and exclaimed, "Ah, Minnie, how wonderful—sauerkraut and spareribs! What a wonderful cook you are!"

As one stunned, Minnie, black hair in a knot at the back of her head, came forward. She laid the flowers on a sideboard. "Oscar," she asked suspiciously, "What have you done?"

"Done!" Oscar dropped his fork and looked at her. "Nothing, except bring you flowers. What's wrong with that?"

"It's not like you," Minnie said, still suspicious. "Let me smell your breath!"

There was a moment of intense silence, then Oscar said bitterly: "Yes, I've done something. I've tried to act like McGillicuddy. He says if you are gay and friendly, people like you and buy more from you. But when I act like that, you get suspicious. I'm not like McGillicuddy. I'm Oscar Schoenfeld. I am what I am, I guess, and I'd better be satisfied."

And silently he wound a big wad of sauerkraut around the highly polished fork.

New Dallisgrass Control Chemical Under Study

COLLEGE STATION, TEXAS—Southern turf growers have a new weapon in their arsenal for the age-old battle with Dallisgrass. It is disodium methyl arsonate.

A comparatively new chemical known primarily for its ability to kill crabgrass, disodium methyl arsonate is a selective grass killer which in tests gives a 90 to 99% kill of Dallisgrass but leaves Bermudagrass strong and healthy, ready to sieze the space immediately. It is not recommended for use on St. Augustine turf, however.

Gene Bockholt, a graduate student at Texas A&M College, is conducting studies. His advisor is Dr. E. C. Holt who heads the grass and forage section of the department of agronomy at Texas A&M.

Acid Truck Crop Soils

STATE COLLEGE, MISS.—A summary of the soil samples tested at the Mississippi State College Truck Crop Branch Experiment Station show that 48% of all truck crop soils tested were strongly acid, having a pH less than 5.6. Aproximately one-half of these strongly acid soils ranged in pH from 4.8 to 5.2. In every instance where complete crop failure has been due to a nutritional disorder the soil were in the 4.8 to 5.2 range.

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Adams & Doyle fertilizer and limestone spreaders are first choice with custom spreaders, fertilizer dealers and large farm operators. Capable of spreading from 100 lb. up to 4 tons per acre. Precision built gear cases. Hood unfolds to 20 feet wide with open ends for 10 to 15 feet extra coverage.

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Hi-D

Ammonium Nitrate Fertilizer. It appears in April issues of *Capper's Farmer, The Progressive Farmer, Prairie Farmer,* and *Farm and Ranch,* March issue of *Florida Grower and Rancher.*

see a sample at your dealer's

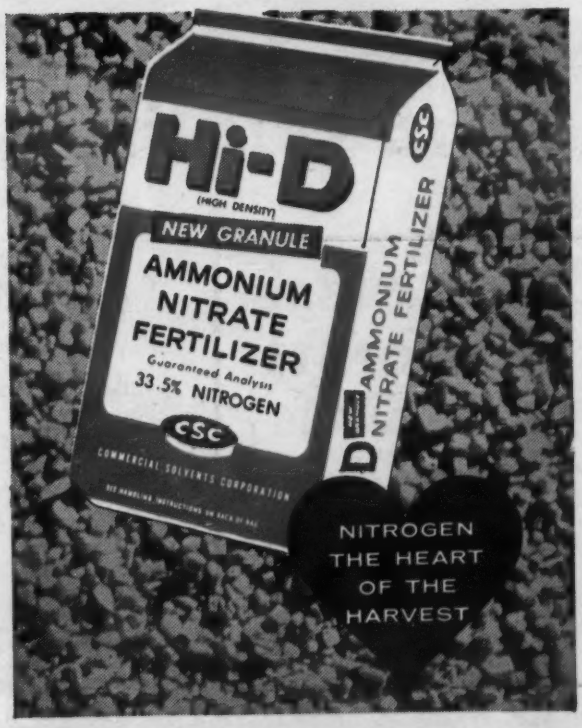
no other ammonium nitrate like it!

Ask your dealer for a sample. See for yourself the advantages of using new Hi-D. An exclusive patented process produces a high density ammonium nitrate with the maximum moisture "squeezed" out. Hi-D is made dry, coated dry and bagged dry. In addition, the controlled size and unique shape of these new granules assure even distribution in all types of spreading operations under all field conditions. Hi-D flows freely, spreads evenly, stays put. It won't gum-up, clog, cake or bridge even on hot, humid days.

Hi-D Ammonium Nitrate contains the 2 key types of nitrogen—the kind of nitrogen in sodium nitrate *and* the kind in ammonium sulphate as well! That's not all. 100 pounds of Hi-D gives you as much nitrogen as 159 pounds of ammonium sulphate or as much nitrogen as 209 pounds of sodium nitrate! The total nitrogen in Hi-D, guaranteed at 33.5%, gives 2-speed fertilizing action. 16.75% *nitrate* nitrogen goes to work fast for good, vigorous starts. 16.75% *ammonia* nitrogen follows up later for a sustaining boost to growth.

There's another kind of value in Hi-D, too. Its high density means less bulk—10 bags stack in the same space as 8 bags of other types of nitrate. In the field this means you get up to 25% more nitrogen from a normal hopper load—you cover more ground per load.

Put the crop-boosting power of Hi-D to work for you this season. And remember, Hi-D should be just one part of your program for productivity. Don't forget—there's no substitute for balanced fertilizers. And, as a nitrogen supplement to the balanced fertilizer your dealer recommends, there's nothing better than Hi-D. See your dealer. Ask for Hi-D—in the green and white bag. You can trust Hi-D in the field and in the yield.



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Industry Patents and Trademarks

2,785,045

Separation of Carbon Dioxide from Ammonia. Patent issued March 12, 1957, to Shen Wu Wan, Bronx, and Samuel Strelzoff, New York, and Claude J. Barr, Stamford, Conn., assignors to Chemical Construction Corp., New York. A method of treating gaseous mixtures both ammonia and carbon dioxide which comprises scrubbing said gases with a cooled aqueous alkylolamine solvent at temperature of about 15°-60° C. in a scrubbing zone and thereby absorbing the carbon dioxide while simultaneously dissolving ammonia in the solvent, withdrawing the resulting purified gas from the upper end of the said zone and withdrawing said enriched solvent from the lower end of said zone, recovering the dissolved ammonia by subjecting the enriched solvent in an initial stripping zone located below the scrubbing zone to an initial heating at 105°-120° C. and simultaneously returning the resulting evolved gases to the scrubbing zone, drawing off the resulting partially stripped enriched solvent, regenerating the solvent so withdrawn by subjecting it to a second heating in a separate zone and thereby liberating most of the carbon dioxide absorbed therein, drawing off and recovering the carbon dioxide so obtained, and cooling the regenerated solvent and returning it to the scrubbing zone.

2,785,101

Fungicidal Compositions of Quinone-Oxime-Hydrazones. Patent issued March 12, 1957, to Ewald Urbschat, Koln-Mulheim, and Paul-Ernst Frohberger, Odenthal, Bezirk Koln, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. A fungicidal composition containing as an active fungicidal substance, a quinone-oxime-acylhydrazone having the following general formula:

$$(HO—N=R=N—NH—x—)_{n1}—R^1$$

in which R is a quinone radical, R^1 is a member selected from the group consisting of hydrogen and organic radicals, x is a radical chosen from the group consisting of

$$—\overset{\overset{O}{\|}}{C}—\ ,\quad —\overset{\overset{S}{\|}}{C}—\ ,\quad —\overset{\overset{NH}{\|}}{C}—\ ,\quad —\overset{\overset{O}{\|}}{\underset{\underset{O}{\|}}{S}}—$$

and n^1 is an integer not higher than 2, and a carrier.

2,785,102

Fungicidal Compositions. Patent issued March 12, 1957, to Waldo B. Ligett, Pontiac, and Rex D. Closson, Detroit, Mich., and Calvin N. Wolf, New York, assignors to Ethyl Corp., New York. As new compositions of matter, 1,2,4,5-tetrahydropyridazine-3,6-diones in which at least one of t methylene groups is substituted wi a radical selected from the class co sisting of sulfhydryl, alkyl merca tans of 1 to 12 carbon atoms, ar mercaptans of 6 to 10 carbon atom trichloromethylthio, alkyloxy of 1 8 carbon atoms.

The method of treating materi susceptible to fungus attack with fungicidal composition containing the principal active ingredient 1,2,4,5 tetrahydropyridazine - 3, 6 - diones which at least one of the methyle groups is substituted with a radi selected from the class consisting sulfhydrl, alkyl mercaptans of 1 12 carbon atoms, aryl mercaptans 6 to 10 carbon atoms, trichlor methylthio, and alkyloxy of 1 to carbon atoms.

Industry Trade Marks

The following trade marks were publish in the Official Gazette of the U.S. Patent Offi in compliance with section 12 (a) of t Trademark Act of 1946. Notice of opposit under section 13 may be filed within 30 d of publication in the Gazette. (See Rules 2 to 20.5.) As provided by Section 31 of the a a fee of $25 must accompany each notice opposition.

Star, Spells Rats Backwards, hand-drawn design, for rodenticid and insecticides. Filed Dec. 29, 19 by Master Laboratories, Beaver Fal Pa. First use 1950. (Official Gazet March 12, 1957)

Sure-Safe, in hand-lettered capita for insecticides. Filed Aug. 1, 1955, Sure-Safe Co., St. Louis, Mo. Fir use July 5, 1955. (Official Gazet March 12, 1957)

Petal Life, in hand-drawn desig for conditioner for cut flowers, nam ly, a chemical composition to be di solved in water in which cut flowe are immersed. Filed Feb. 8, 1956, Park-Elitch Co., Denver, Col. Fir use Aug. 18, 1954. (Official Gazet March 12, 1957)

Crab-E-Rad, in hand-drawn desig for aqueous solution or arsenic co pound for control of crabgrass. Fil Feb. 10, 1956, by Vineland Chemi Co., Vineland, N.J. First use in Ma 1954. (Official Gazette, March 1957)

Lustergrip, in capital letters, anti-skid compositions adapted to applied to paper bags and other co tainers. Filed June 15, 1956, by Regis Paper Co., New York. Fir use March 24, 1956. (Official Gazet March 12, 1957)

Philgro, in capital letters, for f tilizer. Filed April 23, 1956, by Ph lips Petroleum Co., Bartlesville, Ok First use July 1, 1955. (Official Gaz te, March 12, 1957)

Cominco, in capital letters, for f tilizers. Filed July 25, 1956, by Co solidated Mining and Smelting Co. Canada, Ltd., Montreal, Que. Fir use June 18, 1955; in commerce, Ju 18, 1955. (Official Gazette, March 1957)

Spray-Green, in hand letter script, for lawn and garden fertiliz Filed Sept. 13, 1956, by Nitro-Liq Fertilizer Co., Rochester, Minn. Fi use July 6, 1956. (Official Gazet March 12, 1957)

Bacti-Vated! In capital letters, soil conditioner. Filed Sept. 24, 19 by Michigan Peat, Inc., New Yo First use Feb. 1, 1950. (Official Gaz te, March 12, 1957)

Baccto, in capital letters, for conditioner. Filed Sept. 24, 1956, Michigan Peat, Inc., New York. Fi use Jan. 30, 1956. (Official Gaze March 12, 1957)

FIELD DAY

MELOLAND, CAL.—California falfa growers attending the ann Meloland field day here April 5 hear some new ideas on control the spotted alfalfa aphid. Andrew Deal, University of California ext sion entomologist, Riverside, will cuss latest scientific findings on trol of the pest, with emphasis new chemicals, biological control management practices favoring of these weapons against the aph

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ACRAMENTO—Ranch Chemicals, , a newly formed cooperative, is nning a new $16,000,000 plant to ovide nitrogenous fertilizer for ifornia farmers.

ncorporators and directors include nan D. Griswold, Hayward, at- ney for the firm; John Squire, noore; Tilford Cheney, Tulare; nley Newton, Stratford; Richard th, Visalia; Edwin Newfeld, Was- W. L. Higgens, Earlimart; T. A. vis, McFarland, and Clyde Hash of alia.

The plant location has not been ermined but selection of a site, ording to Mr. Griswold, will de- d on geographical location of rs of the fertilizer and availabili- of raw materials.

Membership in the cooperative will open, Mr. Griswold said, to farm- in the San Joaquin and Sacramen- Valleys as well as other parts of state. In addition to individual rmers, agricultural associations also l be eligible for membership. Cot- interests predominate in the orig- l board of directors but other agri- tural activities are expected to in- st in the firm, Mr. Griswold said.

A survey is being conducted to esti- te the annual requirements of an- hirous ammonia of 24 cooperative tton gins in the San Joaquin Val- . Mr. Griswold said it is estimated t the total will reach 15,275 tons. estimated that it will be 18 nths to two years before construc- n of the plant is completed.

★ ★ ★

alifornia Farm reau Considers rtilizer Plant

SAN FRANCISCO — A proposal a cooperative-owned fertilizer nt was considered at a meeting the California Farm Supply Co. Yuba City recently.

L. A. Rozzoni, president of the mpany, asked the presidents of the unty supply offices if they would pport such a plant in California, d the unanimous response was t they would.

The directors of the company were quested by the stockholders to in- stigate the feasibility of owning d operating a fertilizer plant. The rectors were asked to present a n for such a project to Farm Bur- u members throughout California.

issouri Fertilizer onnage Shows crease in 1956

COLUMBUS, MO.—Missouri ferti- er sales in 1956 totaled 785,949 ns, compared with 771,556 tons in 55, according to a report from the iversity of Missouri Agricultural periment Station.

The 1956 figure includes 205,080 s of rock phosphate and the 1955 ure includes 212,415 tons.

Mixed goods sales in 1956 totaled 4,525 tons, with an average com- ition of 8.33-14.10-11.85 (34.3%), mpared with 449,871 tons in 1955, ith average composition of 7.88- .19-11.19 (33.3%).

Materials sales in 1956 totaled 36,- 7 tons of N, 7,040 tons of P_2O_5 and ,972 tons of K_2O. All were in- eases from 31,339 tons of N, 6,398 s of P_2O_5 and 11,019 tons of K_2O 1955.

TEXAS FIELD DAYS

COLLEGE STATION, TEXAS— xas A&M College has scheduled ld days at the Pan-Tech Experi- nt Farm on April 4 and the Prairie w Experiment Farm April 26.

ONION ACREAGE

PORTLAND, ORE.—Increased 1957 Oregon dry onion production is indicated by a March 1 survey of grower intentions by the Oregon Crop Reporting Service. Malheur area growers expect to have 2,900 acres of onions for harvest compared with 2,500 last year. Western Oregon's 1957 onion acreage is expected to remain unchanged from last year at 2,000 acres. The Malheur onion outlook is satisfactory at this time and there is a good supply of irrigation water.

Delaware Borer Control Campaign Under Way

NEWARK, DEL.—Dr. Louis A. Stearns, head of the department of entomology at the University of Delaware, and Donald MacCreary, research entomologist there, are organizing a promotional campaign designed to cut down on what could be more than $500,000 damage by corn borers in Delaware corn fields this year.

Last year the borer ate its way into more corn than during any year back to 1936, two years after the insect was first found in Delaware. Dr. Stearns said the borer damaged $849,194 worth of corn last year, taking a bite of about $174 out of the average farm income from Delaware's corn.

Through the years, farmers in Sussex County have contributed most to the support of the corn pest —52% of the bill. Kent county farmers have paid 29% of the borer loss, and New Castle County farmers 19%.

An effort involving every community in the state is the only way to cut down on borer damage, Dr. Stearns and Mr. MacCreary believe. In the effort to cut down on borer damage this year, the entomologists hope to receive the cooperation of county agricultural agents, 4-H club members, newspapers, and radio and TV stations. Suggestions on controlling the corn borer will be sent out by the entomologists in Late News, a weekly summary of insect and plant disease recommendations. Posters placed throughout the state and special mailings to farmers will be used to urge control of the pest by plowing before May 1.

FRUIT GROWERS SCHOOL

DURHAM, N.H.—The second annual New Hampshire Fruit Growers School will be held at the University of New Hampshire here April 2.

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Olin Mathieson Net Sales Reach New High in 1956

NEW YORK — Consolidated net sales of Olin Mathieson Chemical Corp. in the U.S. and Canada increased by 6.5% in 1956 to a record high of $596,673,005, John M. Olin, chairman, and Thomas S. Nichols, president, announced in the annual report to stockholders. Sales in 1955 totalled $560,480,335.

Net income for 1956 increased from $44,558,102 in 1955 to $44,791,071 in 1956. This was equal to $3.38 a share on the average number of common shares outstanding, compared to last year's earnings of $3.51 a share on a substantially smaller number of shares outstanding.

The 1956 results do not include sales of $48,519,075 from operations in foreign countries other than Canada. The report also noted that earnings of $1,484,868 from foreign operations were retained abroad and are not included in the 1956 figures. These retained earnings are after exchange losses and provisions for such losses of $1,452,332.

The report noted that the company increased its net income in spite of reduced profits on agricultural chemicals caused by lower farm income and drouth conditions; reduced sales of brass and brass products due principally to the high and fluctuating price of copper; and a prolonged strike, settled in January, at the sodium phosphates plant at Joliet, Ill.

Sales and earnings for 1956 reflect 12 months of operations of the kraft paper products facilities at West Monroe, La., which were only included for the final three months of 1955.

Olin Mathieson's capital expenditures on new plant and equipment totalled approximately $49,000,000 during 1956. These funds were expended to complete a new cellophane plant at Olin, Ind.; to double chlorine and caustic soda capacity at the McIntosh, Ala. plant; and to build new explosives facilities near Marion, Ill., new aluminum fabricating facilities at Omal, Ohio, and new pilot plants and expanded research facilities for nuclear and high energy fuels operations.

In addition, Olin Mathieson and Revere Copper & Brass Inc., created a jointly-owned, affiliated company to produce primary aluminum. Total capitalization of the new affiliate is $231,000,000.

37,897 Acres in Arkansas Sprayed With 2,4-D in 1956

LITTLE ROCK—Custom and private applicators sprayed 37,897 acres and several hundred miles of right-of-way in Arkansas with 2,4-D or 2,4,5-T during 1956 according to reports filed with the Arkansas State Plant Board.

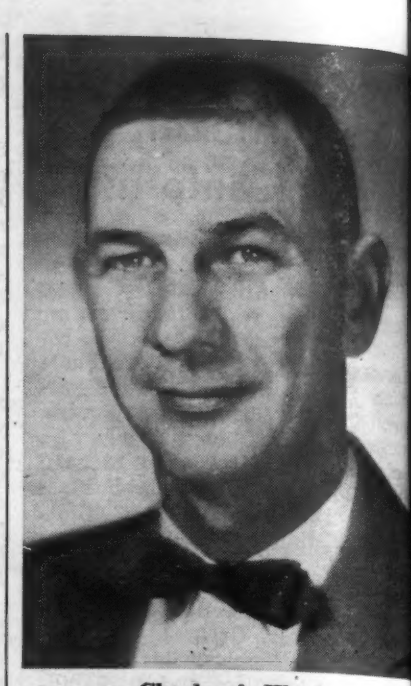
Of the total, 29,440 acres were sprayed by plane and 8,547 acres by ground equipment.

The 37,897 acres in 1956 compare with 41,429 in 1955, 45,153 in 1954, 49,043 in 1953, 31,000 in 1952 and 23,000 in 1951.

Included in 1956 sprayings were 29,190 acres of rice, 4,965 acres of brush, 3,252 acres of lespedeza and 580 acres of other crops.

ALFALFA MOSAIC

DAVIS, CAL.—Alfalfa mosaic has turned up on tomato plants, a University of California plant pathologist told growers at the recent Tomato Day on the Davis campus. Dennis H. Hall, extension specialist, predicted that the mosaic, identified on tomatoes for the first time this year, could become a serious problem, if one or two strains of the virus become solidly established in an area.



Charles A. Wood

Charles A. Wood Named to New Olin-Mathieson Post

NEW YORK—Charles A. Wood of Kingston, Ohio, has been named sales manager, East Central area for the northeastern district of the Plant Food Division of Olin Mathieson Chemical Corp., it has been announced by S. L. Nevins, vice president.

Formerly sales manager for anhydrous ammonia, Mr. Wood will now have responsibility in this area for the sales of the division's complete line, including Ammo-Phos fertilizer, ammonia and other agricultural chemicals. He will report to A. B. Verdery, manager of the northeastern district, with headquarters at Baltimore, but will operate from 426 N. High St., Columbus 15, Ohio.

California Chemical Employment Increases

SAN FRANCISCO — Employment in the chemical manufacturing industry in California was up roughly 4% in January of this year as compared to the previous January. The Division of Labor Statistics estimated a climb from 37,400 wage and salary workers during the first month of 1956 to 38,800 for the same month of the current year, an increase of 1,400 workers.

The gain is indicative of a continuing trend toward expansion in the industry in the state, and includes manufacturers of agricultural chemicals as well as related fields. There was a drop from the December figure, a seasonal change, when the number at work was estimated at 39,300.

The production worker segment was on the average better paid this January than last. The men and women employed in the plants themselves earned an average of $2.30 an hour as compared with $2.19 the previous January. This meant that although the length of the work week remained at 41.2 hours, the average production worker this year earned $94.65, or better than $4 more than he had earned 12 months before.

Airplane Spraying for Mosquito Control Proposed

CORCORAN, CAL.—Possibility of using airplane spraying this year in mosquito abatement work was brought up at a Corcoran Mosquito Abatement District meeting recently. Richard Frolli, acting district manager and entomologist, recommended to the trustees that the district spend an estimated $1,600 to spray some of the worst breeding areas. The board, however, took no action at this time.

The officials did authorize the use of diluted parathion spray to be used exclusively in the rural section in the 93 square mile district that includes the cities of Corcoran and Wauken

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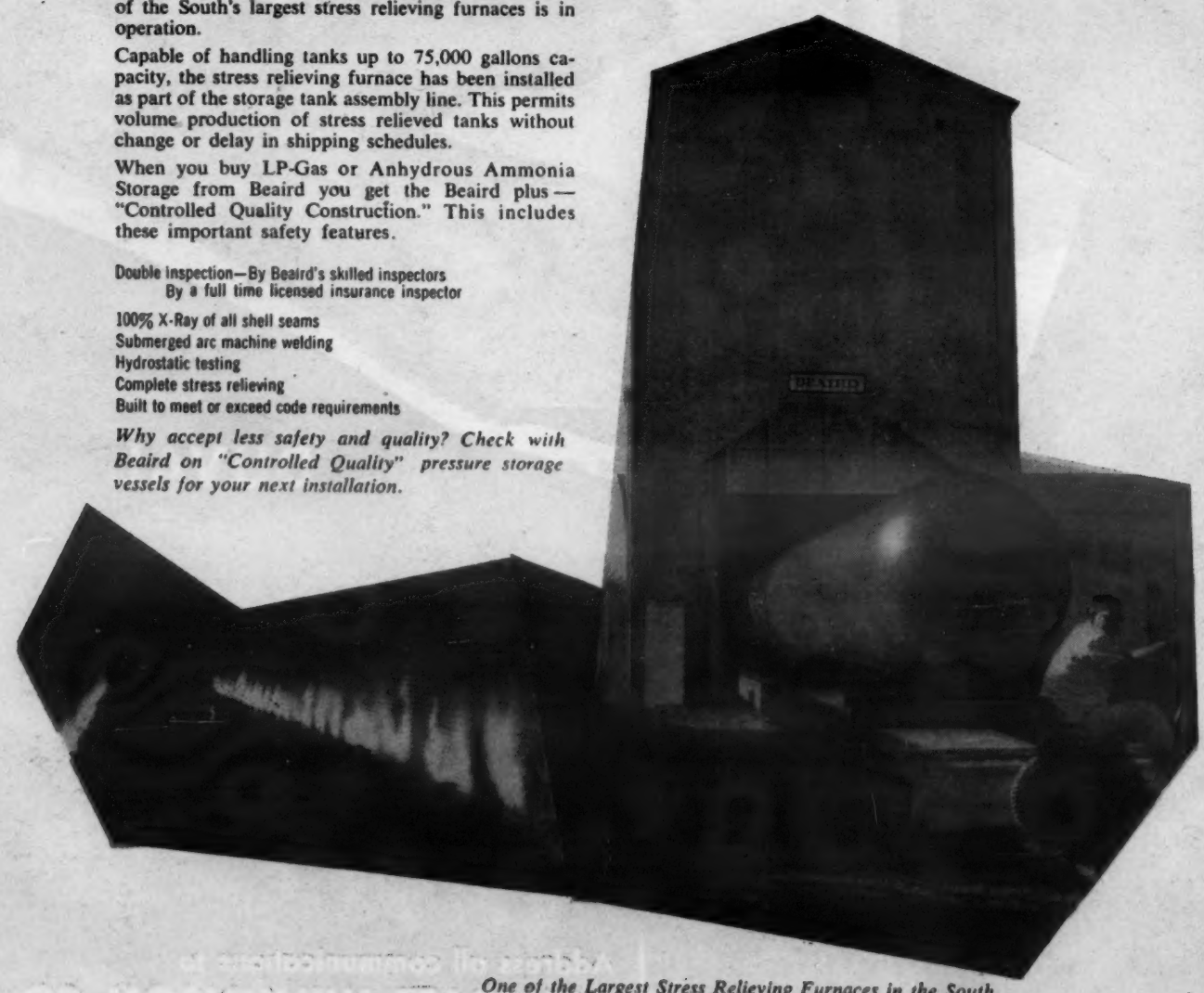

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ISSOURI HUDDLE—Bob Wegner, Sky Haven Airport, Warrensburg, Mo., ght, and Stirling Kyd, University of Missouri extension entomologist, left, sit with Dr. Harold H. Golz, associate medical director of American Cyana- id Co., New York, at the annual Missouri Aerial Applicators Short Course eld on the Missouri campus recently. Dr. Golz spoke on the safe handling phosphate insecticides during his appearance on the program.

MISSOURI MEETING

(Continued from page 1)

ontrol, providing no susceptible rops are grown on the infested oil during the entire period. By his method, he said, the nematode opulation may be greatly reduced.

It's also important that other host lants be found, he noted, because e rotation control method would ecome ineffective should another op susceptible to the nematode be cluded in a rotation. Mr. Thorne alifies as one of the country's lead- g authorities on nematodes as a sult of his 38 years study and re- arch with nematodes and their con- ol. At one time, he was person- ly active in the battle to control e sugar beet nematodes in western et-growing areas.

"The soybean cyst nematode is ery similar to the one that attacks ugar beets," the nematologist con- luded, "and since sugar beet grow- rs are still in business in those reas, I'll predict that Missouri armers will still be growing soy- eans in a few years from now de- pite the nematode."

Mr. Thorne was one of eight speak- s appearing on the final day's pro- am that dealt with the chemical d of the aerial applicator's busi- ss. The first day's program had alt with aerial problems and sub- cts. Sponsors of the short course ere the University of Missouri Col- ge of Agriculture and the Missouri rial Applicators Assn.

Another out-of-state speaker ap- aring in the final day's program as Dr. Harold H. Golz, New York, sociate medical director of the merican Cyanamid Co. He spoke to the group on the safe handling of phosphate insecticides that are currently growing in popularity.

The phosphate derivatives are more popular because they are effective against a greater number of insects, Dr. Golz said. To date, insects have failed to develop tolerances to the phosphates and the insecticides in the group weather quickly enough after application so that the residue problem on a crop is reduced to a minimum, he said.

Dr. Golz told the aerial applicators that only experienced commercial applicators should apply the phosphate compounds. And, even they should take the greatest of care to avoid direct contact with the material being used. He outlined emergency treatment to be used on anyone affected by the insecticides in the phosphate group.

A third speaker on the program Hale Fletchall, University of Missouri field crops department staff member, described research work with new weed killers at the Missouri Experiment Station. He included in his discussion the chemicals simazin, dalapon, randox, sodium PCP and the herbicides in the carbamates and butyric and benzoic acids.

Mr. Fletchall reported results obtained with simazin in the first year of testing at the Missouri station. Test corn plots treated with two pounds of the chemical were entirely weed free and yielded 106 bu. of corn to the acre without the benefit of cultivation.

Meanwhile, he said, an adjoining test plot, treated with the standard treatment of 1½ lb. of 2,4-D an acre and uncultivated, yielded only 79 bu. an acre.

Two University of Missouri extension specialists, Ross Fleetwood, field crops, and Stirling Kyd, entomologist, noted in their talks that the Miller Amendment to the Food, Drug, and Cosmetic law of 1938 has severely complicated the matter of making recommendations for the use of herbicides and insecticides.

In his presentation, Mr. Fleetwood gave the aerial applicators the current herbicide recommendations of the extension service with the warning that they might be changed in the near future as a result of adjustments to fit the Miller Amendment regulations.

Likewise, Mr. Kyd reluctantly gave out insecticide recommendations as he noted that they were likely to be affected by new decisions passed on as a result of the legislation.

The entomologist also reviewed the insect outlook for Missouri as it appeared at mid-March. Most interesting in this portion of his talk was the report that the spotted alfalfa aphid had evidently failed to overwinter in Missouri and would not be likely to cause much trouble until winged migrations from the southwest developed later in the year.

However, Mr. Kyd said that the pea aphid could develop into a serious threat in Missouri alfalfa fields.

Others appearing on the final day's program were W. J. Murphy, John Falloon, and J. S. McKibben, University of Missouri field crops specialist, soils specialist and agricultural engineer respectively. Mr. Murphy had as his subject recommendations on desiccants and defoliants while Mr. Falloon talked about liquid fertilizers and the possibilities they held for aerial applicators. Mr. McKibben discussed dispersing equipment for liquid fertilizers.

Dr. John H. Longwell, dean of the Missouri College of Agriculture, appeared on the program as official greeter to the group. He was followed by Robert A. Maddox, Missouri division of insurance, Jefferson City, who talked about workmen's compensation rates.

Others appearing on the program with Harlen Herrin, National Insurance Underwriters, St. Louis; Albert Reed, Civil Aeronautics Administration, North Platte, Neb.; Jim Henry, Ohio State University, Columbus, Ohio; and W. M. Latta, Hastings Skyways, Hastings, Neb.

MCA APPOINTMENTS

WASHINGTON—Elbert C. Weaver, instructor in chemistry of the George Peabody Foundation at Phillips Academy, Andover, Mass., has been appointed senior education advisor for the Manufacturing Chemists' Assn. Dr. James K. Hunt, formerly of the Du Pont Co., has been named education advisor. Both men will assist in the development and execution of MCA's expanding aid-to-education activities, devoting special attention to work on the program for teachers and students of senior high school chemistry. They join Dr. William E. Chace, director of education, who for the past two years has been in charge of the overall program which is conducted with the guidance of a 22-man Education Advisory Committee.

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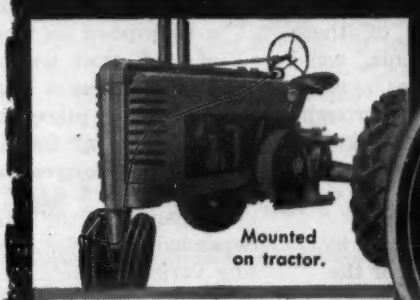

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Research Budget a "Must" In Making Progress Pay Off

No doubt many people who tend to become confused with the constant developments in the agricultural chemical field, wish sometimes that progress would stand still long enough for them to catch up with things. It is an understandable desire, but just the same, the industries involved in producing plant foods, pesticides, and other chemical products for the farm are plowing back more and more into research for tomorrow's improvements. Results of these efforts over the past couple of decades is evidence enough of the value of such research.

Will this search for information continue on and on? There is plenty of evidence that it will.

The petrochemicals industry will probably set a record in research expenditures in 1957, according to L. C. Kemp, Jr., general manager of the petrochemical department of the Texas Company. Speaking before an audience composed largely of farmers at Cornell University's annual farm and home week, he estimated that the industry will spend as much as $100 million in 1957. No doubt many of the findings of these laboratory studies will result in changes in concepts of fertilization, pest control and other agricultural practices.

In reviewing the growth of the industry, he pointed out that although the first petrochemicals company went into operation in 1925, the growth and earnings of this endeavor were practically non-existent up to the time of Pearl Harbor.

Following World War II, he said, there was a good deal of pessimism about making profitable use of the wartime petrochemical capacity which had been used for providing chemicals such as ammonia and toluene for explosives and butadiene and styrene for synthetic rubber.

However, by 1956, there were about 150 companies in the business of turning out 35 billion pounds of petrochemicals valued at $4 billion, he said. Prominent among the products of these plants, of course, are fertilizer ammonia, weed killers, cattle feed supplements, pesticides, synthetic detergents, etc., all of which have been brought about through research and experimentation.

In analyzing the growth of the petrochemical industry, Mr. Kemp told his audience:

"It seems to me that the key element in this entire situation is the willingness of the managements of the oil and chemical companies to put large sums of money into research and development work and to back it up with the much greater expenditures needed for the plants to make the new products in commercial quantities." As an example, he cited the production of ammonia for fertilizers to show how petrochemicals have largely taken over the production of a product which once was exclusively based on coal as the raw material. "About 85% of ammonia production now comes from petrochemical operations," he said.

Leaders in the field have often remarked that the mere construction of manufacturing facilities in the agchem field is just the beginning. It is always a "must" item in any planning, to include a healthy budget for research to improve present products and to create new ones.

Pest Control of 1907 Recalled by Anniversary

Modern agricultural pest control is so well known to all, that it seems hardly possible that within the lifetimes of many in the trade, controls have developed as much as they have from practically a standing start.

In connection with the fiftieth anniversary of California Spray-Chemical Corp., this forward-looking company has taken time out to take a look back into the past in order to compare the pest control methods of "then and now."

Historians, going through musty documents in an effort to reconstruct the environment of the company's founders, E. E. Luther and W. H. Volck, came across some excerpts from the "Pacific Rural Press" dated 1906, which seem to be quite revealing of the industry's progress in the intervening years.

One excerpt from the paper was a report that a reader had sent in a box of apple twigs "covered with insects" to the editor for identification and instructions for their control. The editor's reply told the inquirer that the twigs were covered with woolly aphis which can be treated by "spraying with a kerosene emulsion or by transplanting ladybirds to feed upon the insects." The control instructions went on: "These insects also inhabit roots. Use 5 gallons of fresh wood ashes around base of tree or use 3 lb. of tobacco refuse in the same way. More than this you cannot expect to do, because it is impossible to extirpate the insect."

The half-century-old paper also contained a "recipe" for extermination of grasshoppers. It included 40 lb. bran, 2 gallons molasses, and 5 lb. arsenic.

Today's pesticide manufacturers and formulators, conscious of safe use of toxic materials, would do some drastic revising of the instructions given in this 1906 paper for compounding this grasshopper-killing product. Here are the instructions as given in 1906:

"Mix bran with enough water so that a lump will only drip slightly. Add molasses, mixing thoroughly by hand. Then work in arsenic with hands. (Beware of cuts or sores, and clean fingernails thoroughly after mixing.) Let stand 12 to 24 hours, then remix. Place as much bait as can be held in a soupspoon on a pile or a shingle at base of each fruit tree or vine. As soon as the poison becomes dry it must be moistened. Be sure to place on boards so they can be gathered up later, otherwise the poison will be a danger to stock."

Apparently, the editors of these papers were depended upon for recommendations for controlling various insects. Someone had published a recipe for a crude herbicide to control dandelions, and the editor of the farm paper took issue with the idea that 2 lb. copper to a gallon of water with the addition of 2½ lb. sulfuric acid would do the job.

Serious doubt was expressed that this would work successfully. The sulfuric acid, it was pointed out, would "kill grass or any other plant, eat the boots off the man who used it, and destroy the hose or sprinkler by which it is distributed. The best way still is to put a little gasoline on each dandelion."

In 1957 it is difficult for us to realize that only 50 years ago, pest control was associated with such laborious hand work, and it makes one understand better the tremendous contributions the pesticide industry has made toward the raising of better crops and more nutritious food over the years.

When Calspray was formed in 1907 on the basis of a patent for a new method of manufacturing lead arsenate and an improved basic lead arsenate, there were only three insecticides and a single fungicide generally available to farmers: Paris green, lime sulfur, lead arsenate, and Bordeaux mixture.

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MEETING MEMOS

pril 7-12—American Chemical Society, 131st National Meeting, Miami, Fla.

ay 20-21—National Cottonseed Products Assn., 61st Annual Convention, Shoreham Hotel, Washington, D.C.

ept. 5-6—Great Lakes States Anhydrous Ammonia Meeting, Michigan State University, East Lansing, Mich.

ept. 8-15—International Congress of Crop Protection, Hamburg, Germany.

ov. 6-8—Fertilizer Industry Round Table, Sheraton Park Hotel, Washington, D.C.

1958

an. 21-23—California Weed Conference, San Jose, Cal.

EDITOR'S NOTE—The listings bove are appearing in this column r the first time this week.

arch 26-28—Council for Agricultural and Chemurgic Research, Congress Hotel, Chicago.

arch 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

pril 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 8-10—National Institute of Animal Agriculture, Seventh Annual Meeting, Purdue University, Lafayette, Ind.

April 14-15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

May 13-15—Carolinas-Virginia Pesticide Formulators Assn., Third Annual Spring Convention, Cavalier Hotel, Virginia Beach, Va., W. R. Peele, Raleigh, N.C., Secretary-Treasurer.

May 20-22—Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

Dec. 11-13 — Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

1958

Jan. 7-8—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, joint meeting. Peabody Hotel, Memphis, Tenn.

CORN CHAMPS—George T. Little, Chesterfield County, left, and Don Grant, Lee County, center, first and second place winners in the annual South Carolina Corn Contest, receive their awards from J. N. Davis of Leesville, president of the South Carolina Plant Food Educational Society, which, with the Clemson Extension Services, sponsors the contest.

212 Bu. Yield Wins South Carolina Corn Growing Derby

COLUMBIA, S.C.—George T. Little, Chesterfield County, who set a new contest record by growing 212.1 bu. of corn on a three-acre plot, was named 1956 South Carolina corn contest winner here recently.

Mr. Little and others received awards from the South Carolina Plant Food Educational Society, which sponsors the contest in cooperation with the Clemson Extension agronomy division.

Second place winner was Don Grant, Lee County, who averaged 188.7 bu. per acre. Mr. Little received a cash prize of $600, and Mr. Grant received $250. Both planted Coker 911 hybrid corn.

Hugh A. Woodle, Clemson agronomy extension leader, told the awards luncheon that the contest, conducted for nearly a decade, has stimulated farmers to change to better corn production practices, with the result that average yield of corn per acre in the state has been increased more than 50% over the 20-year average period prior to 1949. It was in 1949 that the first state corn contest was held, an outgrowth of an earlier production-boosting effort, the 100-Bu. Corn Club.

Mr. Woodle attributed the increased production by corn growers to the South Carolina 5-Point Corn Program which recommends thorough soil preparation, use of recommended certified hybrids, liberal fertilization, growing 12,000 to 15,000 plants per acre and early shallow cultivation.

J. N. Davis, Leesville, president of the sponsoring society, presided at the luncheon and presented cash awards. Certificates were presented to 45 growers who had previously exceeded 100 bu. per acre in competition by J. Rupert Fulton, Columbia, past secretary-treasurer of the society. Gold keys to 39 new 100-bu. producers were awarded by J. Chiles Calhoun, Hartsville, vice president.

Besides Mr. Little and Mr. Grant, other cash prize district winners were J. H. Bolding, Pickens, 169.8 bu.; J. S. Tollison, Greenville, 163.9; C. W. Josey, Lee County, 181.7; H. K. Covington, Jr., Marlboro County, 147.8; Ed Barnette and Rufus Werts, both of Greenwood, each 188.4 bu.

Georgia Firm Puts Addition in Operation

OCILLA, GA.—Ocilla Oil & Fertilizer Co. has started operation of its new plant addition, Otto Griner, manager, reports. The addition provides 40,000 extra square feet of space. The plant now has production of up to 1,000 tons a day.

Price Boost

MEMPHIS — Grace Chemical Co. has announced a $5 per ton increase in the price of all solid urea products, effective April 1, 1957. This increase applies to all f.o.b. prices, and is likewise applicable in cases where freight allowances are granted to meet competition. This price increase has become necessary because of increased labor, freight and manufacturing costs, the company stated.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $10 per column inch.

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New Mexico A&M Gets New Substation

STATE COLLEGE, N.M.—Middle Rio Grande Valley farmers are working closely with New Mexico A&M College to expand service in that area by research on 210 newly-acquired acres south of Los Lunas, Dr. Roger B. Corbett, A&M president, said recently. The land, recently leased to the college for 99 years by the board of commissioners of the State Penitentiary, will be the new site of A&M's Middle Rio Grande Substation.

Building plans at the substation call for offices and laboratories, a greenhouse, and barns for equipment, fertilizers, seed and insecticides. Plans for land preparation and distribution and application of water are being developed. Superintendent of the Middle Rio Grande Substation is Harbour Jones.

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'TOXAPHENE GIVES US OUR BEST CONTROL'

Jack McLemore, Jr., of McLemore Plantation near Montgomery, Alabama, is a man who finds out for himself the best methods of cotton production. "We used toxaphene altogether, then for a couple of years experimented with other insecticides," he says. "Now we've gone back to toxaphene as it gives us our best control."

In Texas, California, Mississippi, and other cotton-producing areas, growers are discovering what Jack McLemore found out in Alabama. Insecticides based on toxaphene protect cotton from the insect pests that attack it—without the complicating factors often encountered in an insect control program.

You can profit from the experiences of cotton growers who are now producing better yields with the help of toxaphene. For more information about the uses of toxaphene, get in touch with any of our offices below.

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